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LIBR

DOMESTIC ENGINEERING

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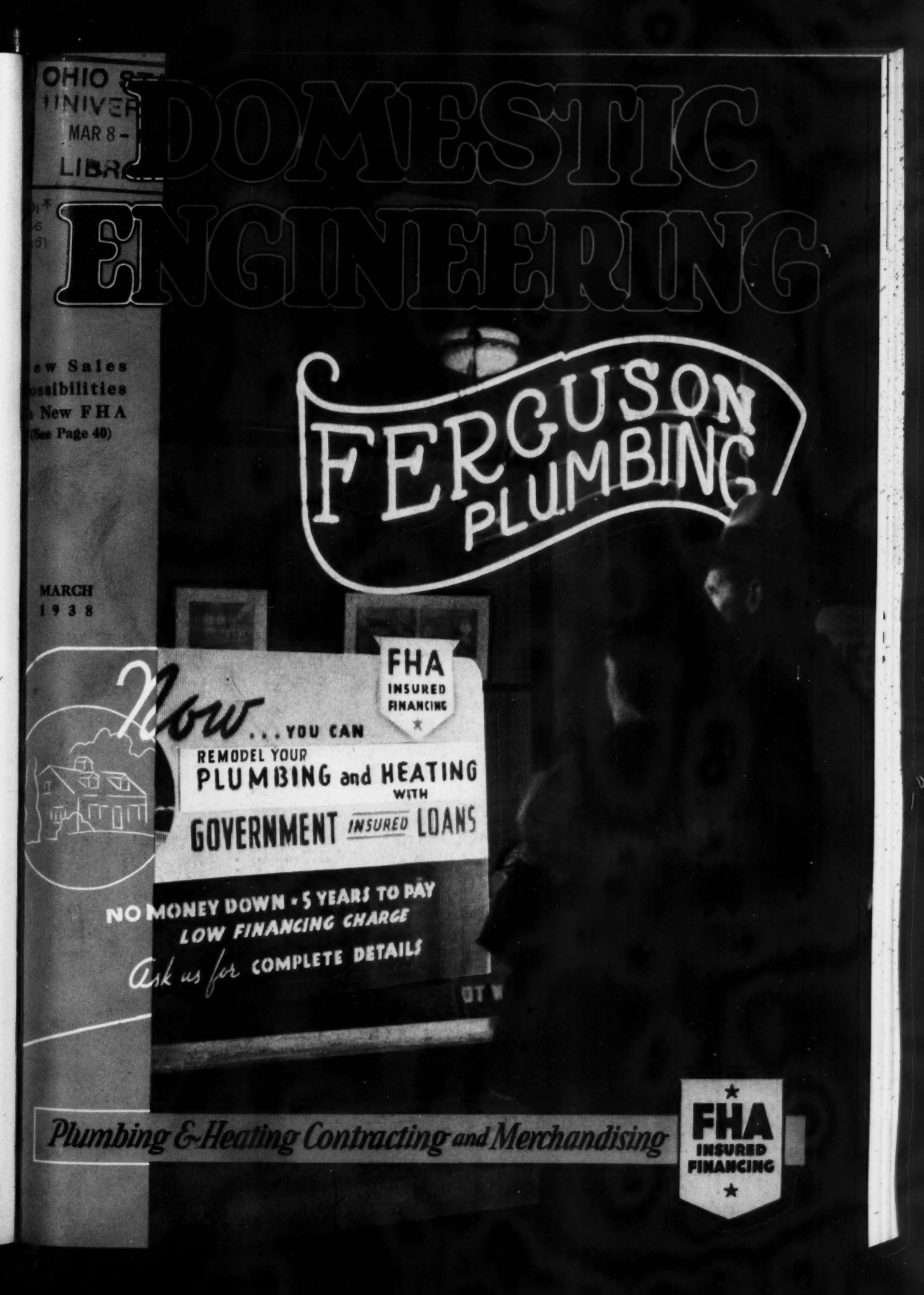
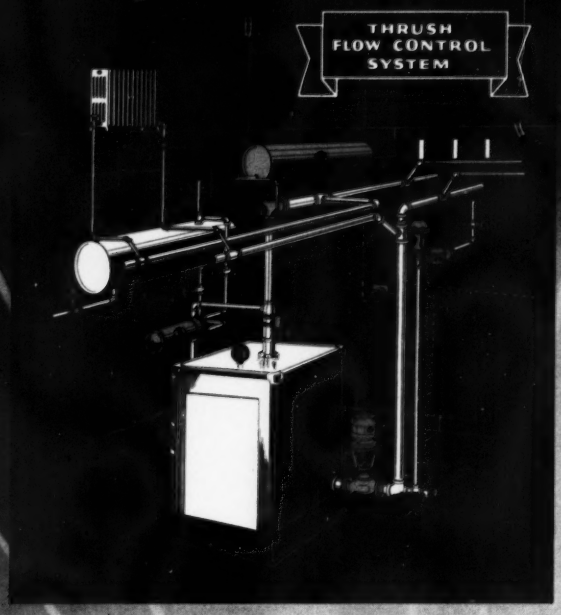
New FHA
(See Page 40)

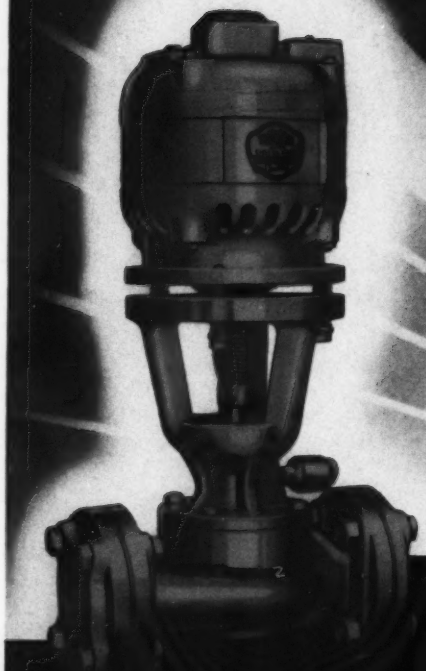
MARCH
1938



The Greatest VALUE IN HEATING

THRUSH Flow Control System has been constantly improved, increased in its efficiency and completeness of its automatic control of warm water heating plants, and its cost has been constantly decreased because of increased volume production—so today the complete system costs little more than the Circulator alone when it was first introduced!





THRUSH WATER CIRCULATOR

CIRCULATION FORCED by a Thrush Water Circulator means new heating economies—reduced costs for fuel and for pipe fittings—less labor, increased profit. The Thrush Water Circulator is the finest and most dependable circulator on the market—and the lowest priced quality circulator you can buy. Your opportunity for renewed profit and broadened service to your community lies in the wider sale of forced circulation with Thrush Water Circulator and the Thrush Flow Control System. Fill out and mail the coupon now.

THRUSH FLOW CONTROL SYSTEM

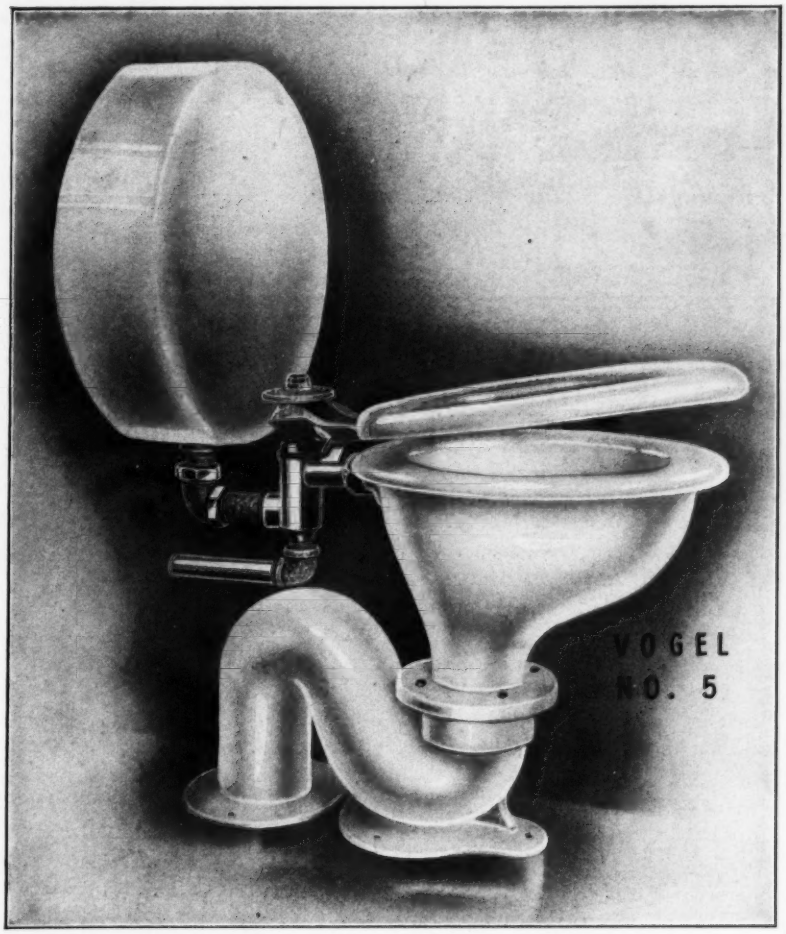
H. A. THRUSH & CO. • Box 459 • PERU, INDIANA

We are interested in more facts about Thrush Flow Control Systems and Thrush Water Circulators.

Name_____

Address_____

City_____ **State**_____



For MILLS and FACTORIES where DURABLE, ECONOMICAL CLOSETS are REQUIRED...

You can't beat the VOGEL Number FIVE

These Closets are built to last longer and withstand the almost continuous wear and tear of factory installations. They keep repairs at a minimum and save money because of their economy in use of water. A thorough, powerful flush is obtained on 4 gallons of water or less. Thousands and thousands of VOGEL Number Five Closets have been installed in factories in all parts of the country, where they are giving complete satisfaction and reducing upkeep costs.

JOSEPH A. VOGEL COMPANY, Wilmington, Delaware · St. Louis, Missouri

VOGEL PATENTED Products ★

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

March, 1938

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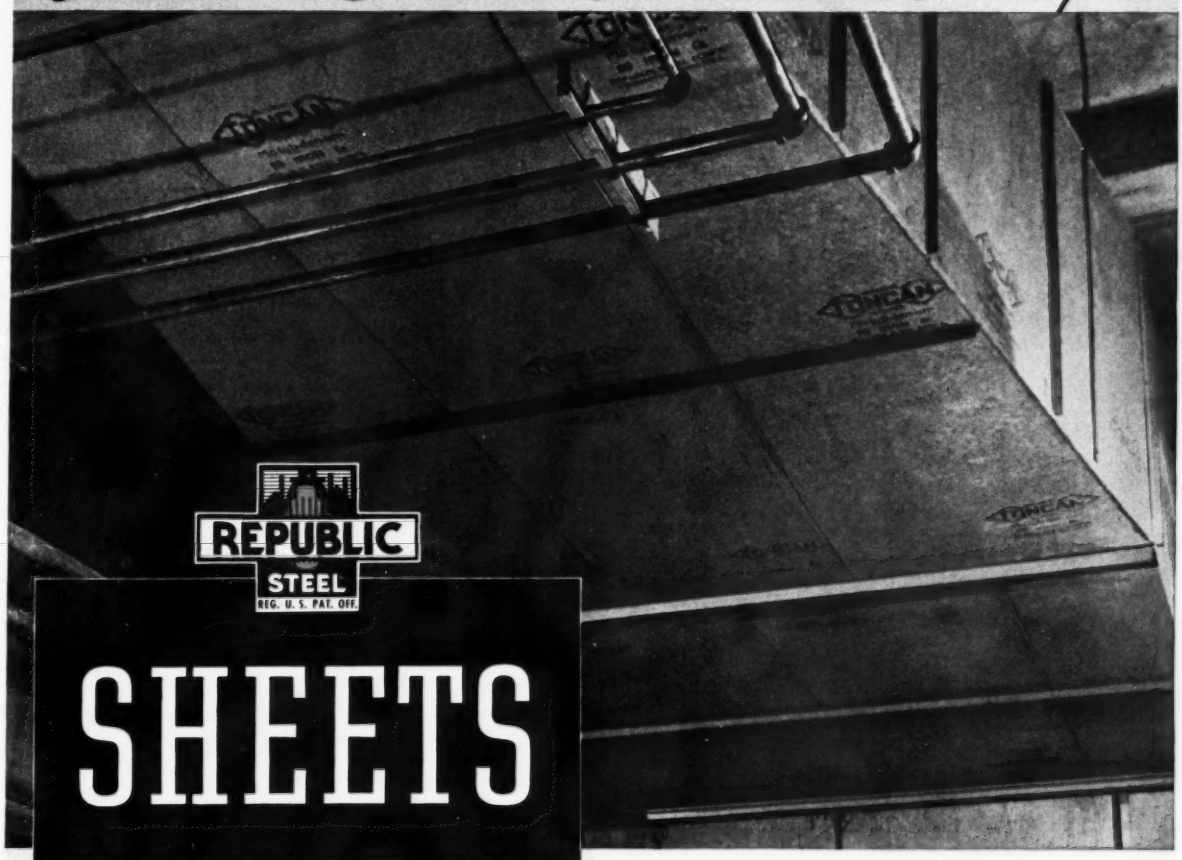
FOR ALL CONDITIONS IN

Air Conditioning—



REPUBLIC STEEL
REG. U. S. PAT. OFF.

SHEETS

● With the complete line of Republic Sheets at your disposal, it isn't difficult to keep air conditioning costs down—and at the same time do outstanding, lasting work.

In some instances or for certain parts of the sheet metal work, Republic carbon steel sheets, black or galvanized, will meet requirements. In other cases, where alternate wet and dry (atmospheric) corrosion is a factor, Republic copper-bearing steel sheets will be worth many times their slight extra cost. And where rust and corrosion seriously menace life of the installation, there is no better material in its price class than rust-resisting Toncan Copper Molybdenum Iron.

With this complete line of sheets and a complete line of pipe, plus ENDURO Stainless Steel, you will be in a position to use just the right material for each condition. You'll be able to install better air conditioning jobs at lower cost per year of service.

For detailed information on Republic sheets or pipe, write Republic Steel Corporation, Cleveland, Ohio.

REPUBLIC STEEL

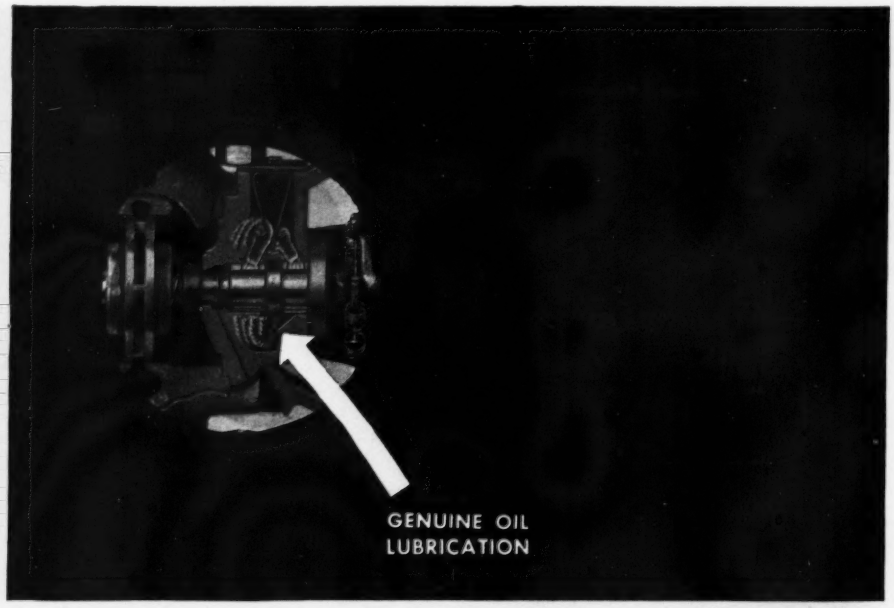
BERGER MANUFACTURING DIVISION • UNION DRAWN STEEL DIVISION
STEEL AND TUBES, INC. • NILES STEEL PRODUCTS DIVISION • TRUSCON STEEL COMPANY

When writing Republic Steel Corporation for further information, please address Department D. E.

Forged brass impeller

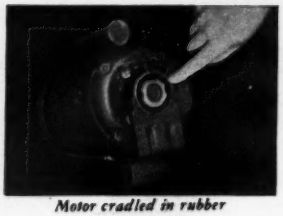
Water-tight seal

Full protection against burn-out

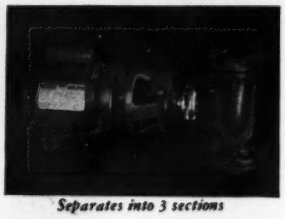


Collar prevents end-play

Hardened steel shaft



Motor cradled in rubber



Separates into 3 sections

WHERE ELSE WILL YOU FIND *ALL* THESE

PUMP PERFORMANCE FEATURES?

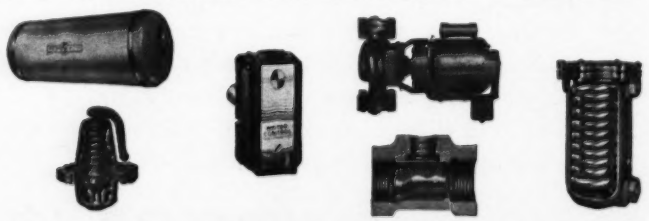
The B & G Booster has them—all the improved design features that shoulder responsibility for a satisfactory forced circulation job.

We made it a *horizontal* unit—with a patented, Water-Tight Seal which eliminates a stuffing box and permits the use of a genuine oil-circulating lubrication system. We standardized on the finest motor obtainable—suspended it in rubber, for quietness . . . and equipped it with full protection against burn-outs.

Only the finest, most durable materials are used in the B & G Booster . . . Navy brass for the forged impeller, *hardened,* polished steel for the shaft, charcoal iron (or bronze, if desired) for the body. And we built into it ample capacity at an amazingly low power consumption.

Where else will you find *all* these advantages in a single circulating pump? Take the gamble out of pump selection—next time specify a B & G Booster. Complete information on request.

B&G



BELL & GOSSETT CO.

3000 WALLACE ST., CHICAGO

MONOFLO SYSTEMS . . . SERVICE WATER HEATING SYSTEMS . . . BOOSTERS . . . FLO-CONTROL VALVES . . . RELIEF VALVES . . . ELECTRICAL CONTROLS

Service behind the Truck

Capitalize on INTERNATIONAL'S After-Sale Service

Wood, Alexander and James, Ltd., are proud of this International Truck which does their hauling in Hamilton, Canada.

LONG before the automotive era, service to the customer was the keynote that guided the men who founded International Harvester. Their policy has been faithfully adhered to through the years.

Today International Harvester has 237 Company-owned branches located at strategic points in the United States and Canada, fully equipped to give International Truck owners the kind of service they have a right to expect. Factory-trained service men, working to precision standards and using genuine International quality parts, turn out the work in the shortest possible time.

Whether International Trucks roll up mileage on the nation's highways or confine their work to city streets, they are *always close to International factory-standard service. Truck dollars go farther with International*—the investment is protected throughout the life of the truck by this matchless after-sale service. Visit our nearby branch and see International service "working." Talk to International owners and you will know its value.

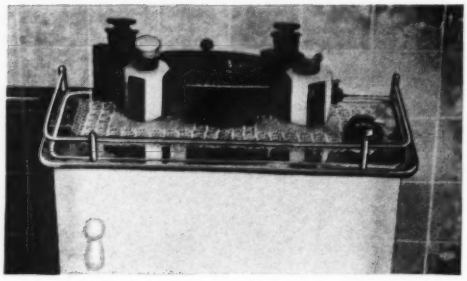
* * *

For well over 30 years, International Harvester has been building trucks with not only dependability in mind, but economy of operation as well. Time alone has not built the reputation and preference for International Trucks—*performance per dollar* on the cost sheets has been the answer. There is an International Truck for every hauling need, ranging from the Half-Ton unit to powerful Six-Wheelers. See our nearby Company-owned branch or dealer for complete details.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 North Michigan Avenue Chicago, Illinois

INTERNATIONAL TRUCKS

5006 Tank Cover



NEW UTILITY SHELF COVER FOR 6-GALLON TANKS

In response to many requests, we present this modern-looking tank cover — it's both a cover and an extra shelf for jars and bottles. Easily installed with adjustable friction grips. Equipped with guard rail. Made of brass, heavily chromium plated.

1563 FLAT-TOP STRAINER

A wide flange strainer for a 3½-inch drilling or smaller. No shelf to catch dirt. Easily cleaned. Notice the extra length of metal in the body and the fact that a regular rubber stopper can be used.

1566 CRUM-CUP STRAINER

Fits any steel or enameled iron sink with a 3½-inch drilling. The sunken "crumb cup" catches particles of food and is easily removed for cleaning. Cast stopper and seat are both machined for leakproof fit.

1466 SHOWER HEAD

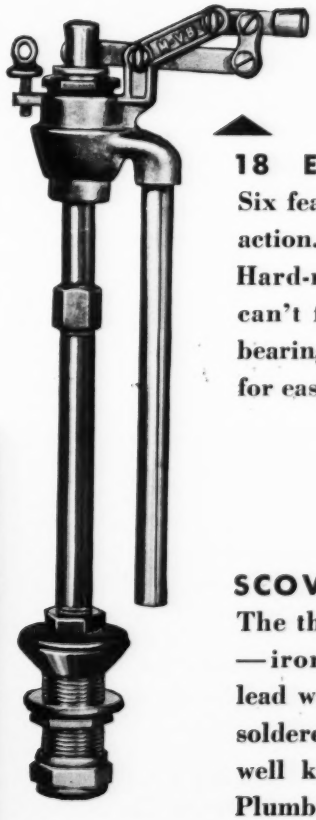
Scovill's new shower head is "in the picture" for the modern bathroom. Its design assures proper spray and looks well too. Available separately or in complete bath-shower combinations.

SCOVILL MANUFACTURING CO.

38 Tank Lever

WITH SMOOTH COMPOUND ACTION

This new lever features the exclusive M-VB double-acting mechanism, favored for years by the trade. It's easy to install, too, without the necessity of using tools on highly polished parts. We feel that this lever is the finest on the market, particularly for the new compact closet installations.



18 ELEVATED BALLCOCK

Six features for positive, trouble-free action. Quiet operation. Rapid refill. Hard-rubber regulator. Regulator can't freeze into valve body. Full-bearing plunger. Powerful leverage for easy installation in close tanks.

SCOVILL LEAD JOINT TRAP

The three big features of this trap —iron-pipe-size nuts and collars, lead washer swivel joint and double-soldered cleanout bushing—are too well known to require description. Plumbers all over the country prefer the Scovill Lead Joint Trap.

WATERVILLE DIVISION • WATERVILLE, CONNECTICUT
MORENCY-VAN BUREN DIVISION • STURGIS, MICHIGAN

Get BEHIND THE SCENES!

TO sell plumbing goods successfully today you've got to get **behind** the scenes . . . into the home and into the customer's confidence. For only in doing so, is it possible for you to check up accurately on your customer's needs and to make suggestions for needed improvements.

How best can this be accomplished? The SHERWOOD Ball Cock offers you your perfect cue! It not only places you conveniently **on** the scene . . . it gets you **behind** as well. The best kind of a setting for a **thorough** selling job!

It is in this kind of setting that prospects are most receptive to your recommendations. As a curtain raiser, explain the many advantages of the SHERWOOD Ball Cock . . . how it puts an end to whistling, gurgling and other costly annoyances common with inferior ball cocks . . . how it eliminates water waste . . . how it closes against any city water pressure. If the prospect has had experience with faulty ball cocks, and chances are he has, he will be quick to appreciate such an explanation.

Lots of contractors . . . men just like yourself . . . have found that in this manner the SHERWOOD Ball Cock opens the way to the sale of many additional profitable items.

Why content yourself with scratching the surface? Let the SHERWOOD Ball Cock get you **behind the scenes.**

SHERWOOD BRASS WORKS

6331 EAST JEFFERSON AVENUE, DETROIT, MICHIGAN

The SHERWOOD Line is complete. There are styles and sizes to meet every requirement. Above are four popular sellers. For further details about these and other SHERWOOD Ball Cocks get in touch with your jobber or write direct.

SHERWOOD Ball Cocks

AUTOMATIC HEATING DEALERS FIND A new ALLY

No. 300 ARCO-DETROIT MULTIPORT

No. 861 ARCO-DETROIT HURIVENT

Excerpts from Dealers' letters:

"Servicing over five hundred oil burners of all makes and types we naturally have some real heating problems due to faulty valves, for which the customer always blames the oil burner. In every case that we have used these valves our troubles have ended."

"We consider that the installation of Arco-Detroit Multiports and Hurivents revamped the system into one which became ideal to operate with a stoker. Coal consumption was greatly reduced. The stoker is now entirely satisfactory . . . another booster for our list of satisfied users."

"We have tried out these valves on several jobs where we were having trouble with heating up the radiators on the second floor. After installing several No. 300 Multiports on these radiators and No. 861 Hurivents on the ends of the mains, we satisfied our customers and saved the Oil Burner order."

"Please accept my thanks for this improvement and your cooperation in helping the Stoker dealers do a better job of automatic heating."

"In one instance there were two radiators at the end of a fairly long steam line: these radiators failed to receive sufficient steam before the Thermostat shut down the burner. After installing the Multiport Valves they heated so rapidly that we were able to close the venting ports down to about two-fifths of full opening and the result was a well balanced system."

"Repeatedly we have equipped the whole house with the No. 300's after one or two have been installed on approval. Regarding the No. 861 Hurivent, this valve has licked a lot of sick heating jobs. For instance, an installation that did require a 2 lb. pressure to drive the air out of the system with the old type of return line vent, is now heating without pressure, with the No. 861."

"In one instance where a customer had paid $5.00 per valve for four different nationally known adjustable valves, we loaned him one of your No. 300 valves and after twenty-four hours' trial he stated your valves vented twice as fast as the others and he now has your valves throughout his home."

"Mr. ———'s steam system is very poorly piped and I recommended that he put an Arco-Hurivent on the main. This, together with the new Air Valves has given him a completely balanced system."

"You will no doubt be glad to learn that (———) of Raleigh had an owner threaten to take out a one-pipe vacuum job stoker fired, and as a last resort replaced the vacuum valves and vents with our No. 300's and No. 861's. The owner is now completely satisfied. Heat is obtained with no pressure showing on the gage."

"You suggested that the writer try these new valves of yours, and I did so about two months ago and find that this room that could not be heated heretofore, now is heated to a very comfortable temperature, and we notice that the house temperature comes up very much quicker. The stoker is turned on at 6:00 A.M. and upon arising at 7:00 A.M., the house is very comfortable, which we did not experience before."

"We can keep our house warm and comfortable with the burner set at 70° or 72° at the outside, while last year we had to keep the burner set around 78° and in order to heat the upstairs, had to close the downstairs radiators. In other words, we fought the heating system all winter to get any comfort at all. I would say now that the system and oil burner are working perfectly."

• • •

Names of these correspondents, and those deleted, will be given on request.

DETROIT LUBRICATOR COMPANY

DETROIT, MICHIGAN, U. S. A. • 5900 TRUMBULL AVE.

NEW YORK, N. Y.—40 WEST 40th ST. • CHICAGO, ILL.—816 S. Michigan Ave.

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

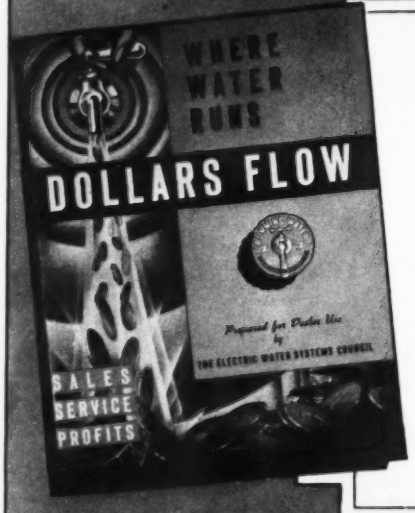
Canadian Representative—RAILWAY AND ENGINEERING SPECIALTIES LIMITED. Montreal, Toronto, Winnipeg

A TIMELY TIP

Join with MYERS

RUNNING WATER
YOUR FAMILY DESERVES IT

and Make the NATIONAL CAMPAIGN "To Sell Running Water to the Rural Market" - and To All Other Markets in Your Locality Successful and Profitable



Talk about business. Here's a timely tip from Myers—join with Myers and take full advantage of the Myers 1938 Water System Sales Campaign (soon to be announced in detail) to sell running water to suburban and rural markets.

Myers is putting over the story in a big way this year. Power lines are spreading in every direction. Old lines are being improved and extended. New markets are opening up in hundreds of localities. Old markets continue to hold thousands of prospects for running water.

With the completeness of the Myers line, its high quality standards, its wide acceptance throughout the country—supported by extensive national advertising and favorable prices, we have a lot of help to offer dealers for increased business and profits during 1938.

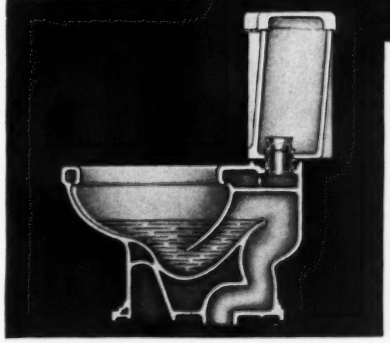
Write or wire us for catalog and details.

THE F. E. MYERS & BRO. COMPANY
ASHLAND, OHIO.

Swing

"Standard" PLUMBING FIXTURES COST NO MORE THAN OTHERS

SPRING SALES *with the* "Standard" COMPACT



Compact, F2045, vitreous china Two-Piece Coupled Closet Combination with Syphon Vortex Bowl and Extended Rear Shelf.

Notice the uniform wall thickness, the even, unobstructed bore of the waste channel and the large water area in the bowl under the entire seat opening.

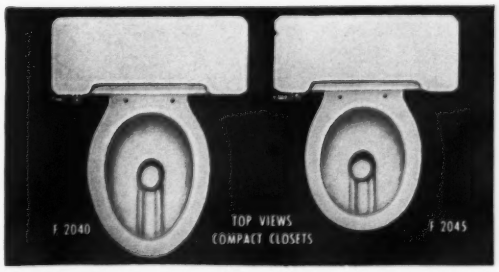
The Compact is available with elongated bowl, F2040, or round bowl, F2045, as shown.

SPRINGTIME is salestime! It's the season when homeowners' thoughts turn to modernization. Feature the "Standard" Compact to bring you bathroom modernization business.

This beautiful, inexpensive, close-coupled closet takes little space—is ideal where close quarters prevail. Combined with its attractive appearance and compact design, it is efficient, dependable, quiet. It has a deep seat, ample water area and a strong vortex flushing action.

Two models, in white, black and ten striking colors, allow homeowners a wide selection from which to choose.

The "Standard" FHA Finance Plan makes it easy to sell on convenient monthly payments. For more information, see your "Standard" Wholesale Distributor.



Standard Sanitary Mfg. Co.

PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Copyright February 1938, Standard Sanitary Mfg. Co.

Bethlehem Pipe
is Good Pipe

Scale-Free Inside and Out

You won't find mill scale in Bethlehem pipe. Two finishing operations crack scale loose, whirl the pipe at high speed until even small, tight particles are freed. Then, while still warm, the pipe is plunged into water. Although well below the critical temperature and so avoiding any possible structural change in the steel, the pipe holds enough heat to generate steam—and this steam bursts off all remaining traces of scale.

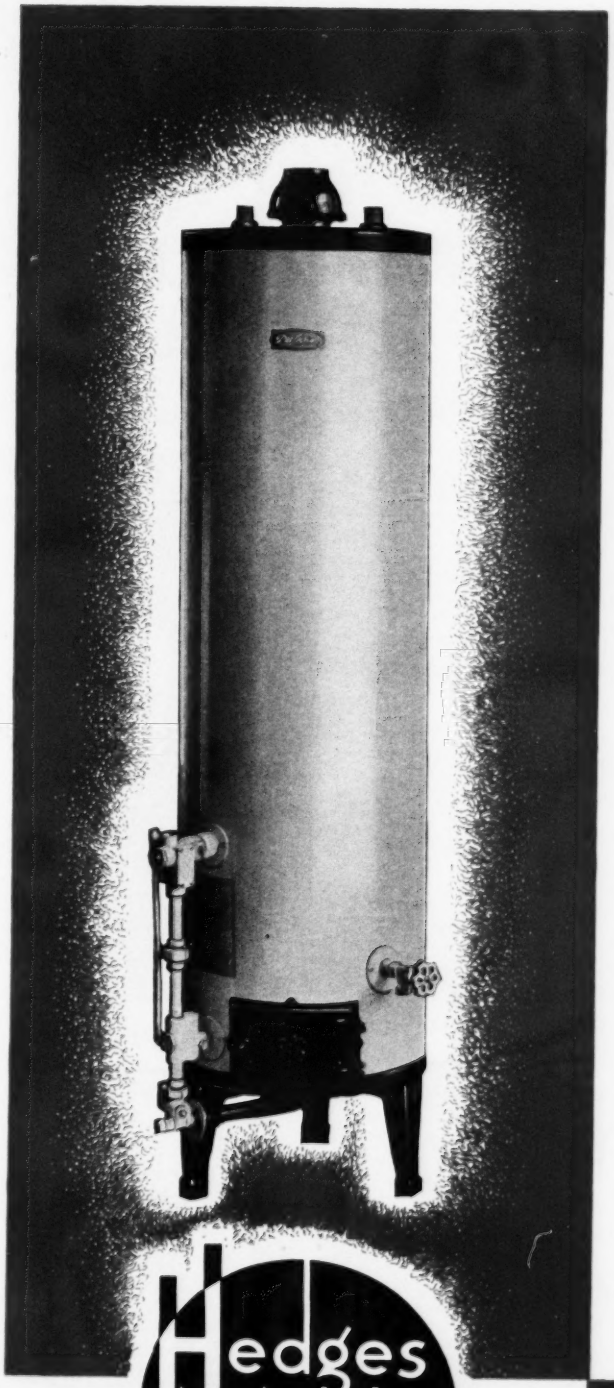
You can install Bethlehem pipe with confidence. Every length is tested and proved sound under hydraulic pressures ranging from 700 to 2500 lbs. per sq. in. Furthermore, the steel in Bethlehem pipe is soft and ductile. Threading, bending and flanging can be done quickly and easily.

BETHLEHEM STEEL COMPANY
General Offices: Bethlehem, Pa.

District Offices: Albany, Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Hartford, Honolulu, Houston, Indianapolis, Kansas City, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Portland, Ore., Salt Lake City, San Antonio, San Francisco, St. Louis, St. Paul, Seattle, Syracuse, Toledo, Washington, Wilkes-Barre, York. *Export Distributor:* Bethlehem Steel Export Corp., New York.

BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL



IN THE

Perfection

AUTOMATIC STORAGE

HEATER

APPROVED BY THE AMERICAN GAS ASSOCIATION

YOU'LL FIND

Pleasing Appearance

Quality

Economy

Efficiency

Dependability

PLUMBERS PREFER PERFECTION PRODUCTS

"PERFECTION" Gas-Fired Automatic Storage Water Heaters

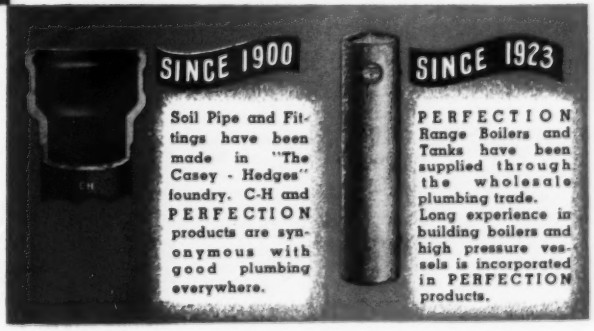
"PERFECTION" Gas-Fired Combination Water Heaters

WRITE FOR FULL INFORMATION

Hedges Walsh Weidner Division

COMBUSTION ENGINEERING CO., INC.

CHATTANOOGA, TENNESSEE



SINCE 1900

Soil Pipe and Fittings have been made in "The Casey - Hedges" foundry. C-H and PERFECTION products are synonymous with good plumbing everywhere.

SINCE 1923

PERFECTION Range Boilers and Tanks have been supplied through the wholesale plumbing trade. Long experience in building boilers and high pressure vessels is incorporated in PERFECTION products.

Salesmanship 1938 STYLE

Sell "CLEAN HOT WATER" ...we'll supply you with material to help do it

There's a big market for CLEAN HOT WATER, and it means better profits for you! Sell water-heating equipment of the non-rust type and you get the profits that go with the sale of quality equipment.

In recent years, tanks of EVERDUR Silicon Bronze have won a reputation as the finest that money can buy. Whether a 10,000-gallon tank for a textile mill, a 1,000-gallon heater for a laundry, or a 20-gallon tank for the home, welded EVERDUR has demonstrated its superiority for tanks and heaters of all types and sizes. Rustless as copper and *strong as steel,* this famous metal has been adopted as the standard non-rust tank material by 50 leading makers of household water heating equipment.

If you're interested in a powerful selling help for EVERDUR tanks, read about the fine window display shown here. 3873

CLEAN HOT WATER
EVERDUR METAL
End Rust Troubles-Save Money
of SUPERIOR SERVICE given by this highly efficient, economical fully-automatic water heater
with its tank of
EVERDUR METAL
"Everdur" is an Anaconda Copper alloy with the strength and toughness of steel

Yours for the asking, if you're carrying a line of automatic heaters with EVERDUR storage tanks. This life-size, full color display will pep up any window. It works two ways. It can be displayed in your window with or without an EVERDUR range boiler, or with an automatic heater equipped with an EVERDUR tank.

ANACONDA

Everdur SILICON BRONZE

THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT

Offices and Agencies in Principal Cities • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

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FIVE BIG FEATURES

Goulds CID Cellar Drainer

Goulds CID Water Supply System for deep wells

Goulds CID Water Supply System for shallow wells

..THAT BRING BUSINESS TO DEALERS..

1. A COMPLETE LINE—With the complete line of Goulds Pumps you can quickly and easily show customers the right pump for every purpose.
2. QUALITY BUILT—Because Goulds is a quality line of pumps built to precision standards for durability and economical performance, you can easily show customers why these pumps give years of satisfactory pumping service.
3. POPULARLY PRICED—Goulds Pump prices help make sales, and ample discounts apply. Goulds Pumps are sold under a fair, rigidly maintained sales policy that protects and aids Goulds' Distributors and dealers.
4. QUICK SHIPMENTS—You can sell Goulds Pumps with confidence. You want to be sure of your pump stock—sure that you will not be held up by delayed shipments. There is no time lost with Goulds—large factory stocks are always available for immediate shipment.
5. NATIONALLY ADVERTISED — Goulds Pumps are continuously and actively promoted through intensive national advertising, direct mail, dealer helps and displays.

You protect both your reputation and profits when you recommend and install Goulds Pumps. If your regular jobber does not handle the complete Goulds line, write us today.

GOULDS PUMPS, INC., 200 FALL STREET, SENECA FALLS, N. Y.

GOULDS

LEADERS SINCE 1848

RUNNING WATER

YOUR FAMILY DESERVES IT

8175

J. L. DAWSON Philadelphia

W. J. DRISCOLL New York

A. H. BEARSE, Jr. Boston

C. E. NAPIER Toronto, Canada

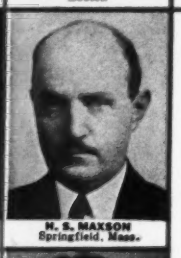
D. A. ZUPA New York

C. H. HARBERGER Philadelphia

E. G. FREIDELL Syracuse

J. H. TATTERSALL Baltimore

J. E. MYERS New York


H. S. MAXSON Springfield, Mass.

R. E. CARLISLE, Jr. Boston

ANTHRACITE INDUSTRIES' TRAINED FIELD STAFF TO SERVE YOU

A phase of the broad promotion program of Anthracite Industries, Inc., that is of direct service to plumbing and heating contractors—is this trained field staff. These men are available to serve you on any problem affecting Anthracite (heating). They have a fund of information about all that is newest in modern Anthracite heating and air conditioning. This field staff is just one of the reasons for the tremendously increased public interest in Anthracite. Other activities are permanent exhibits of Anthracite equipment in key cities. Huge displays at foremost heating shows. A major program of consumer advertising reaching millions. For information about Anthracite heating, write ANTHRACITE INDUSTRIES, Inc., Chrysler Building, New York.

WM. REID Washington

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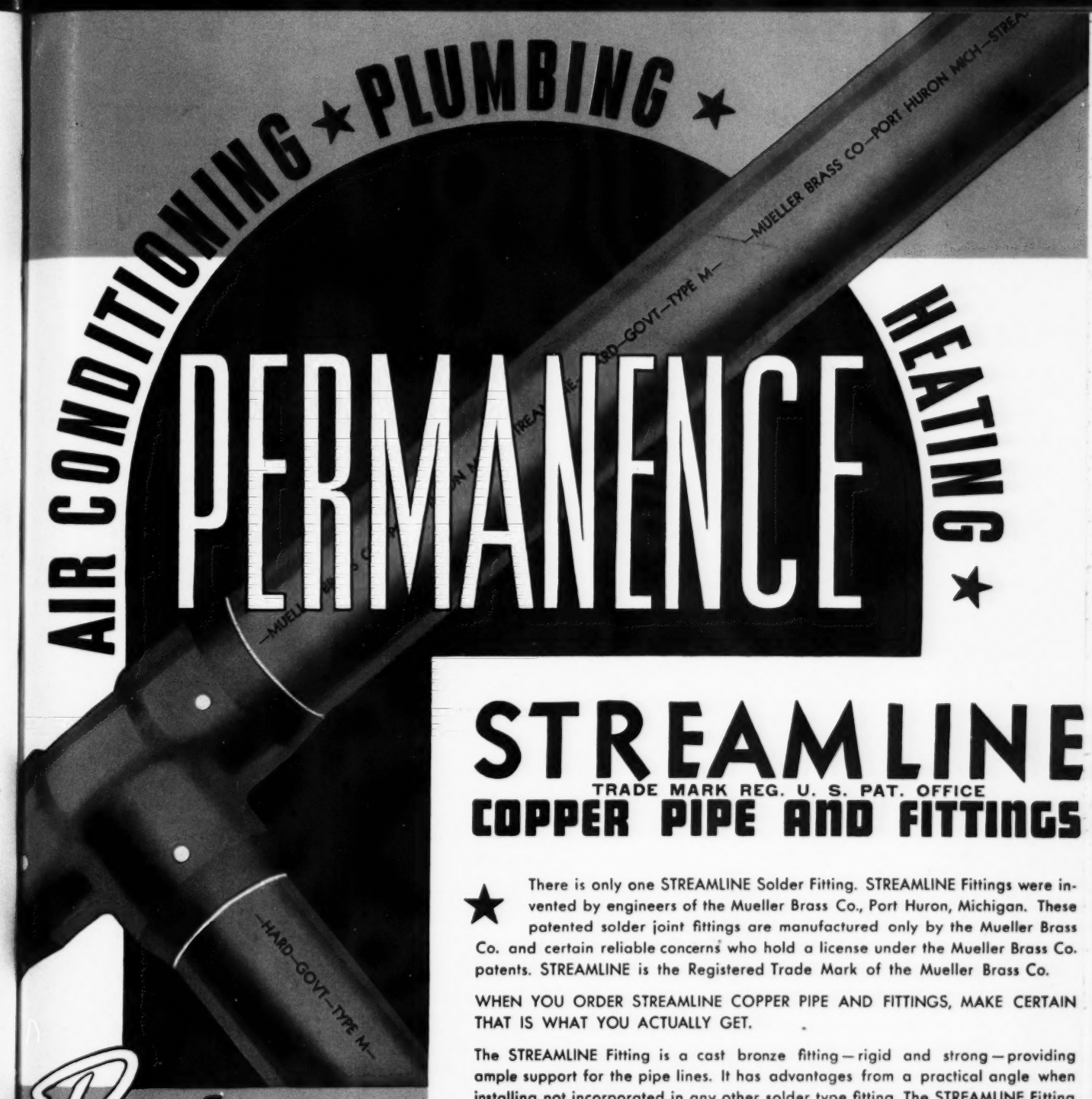
ANTHRACITE INDUSTRIES INCORPORATED approved

This Seal of Approval appears on Anthracite Equipment only after it has passed the most rigid tests in the heating field.

Pennsylvania ANTHRACITE COAL

AIR CONDITIONING ★ PLUMBING ★ HEATING ★

PERMANENCE



STREAMLINE

TRADE MARK REG. U. S. PAT. OFFICE

COPPER PIPE AND FITTINGS

★ There is only one STREAMLINE Solder Fitting. STREAMLINE Fittings were invented by engineers of the Mueller Brass Co., Port Huron, Michigan. These patented solder joint fittings are manufactured only by the Mueller Brass Co. and certain reliable concerns who hold a license under the Mueller Brass Co. patents. STREAMLINE is the Registered Trade Mark of the Mueller Brass Co.

WHEN YOU ORDER STREAMLINE COPPER PIPE AND FITTINGS, MAKE CERTAIN THAT IS WHAT YOU ACTUALLY GET.

The STREAMLINE Fitting is a cast bronze fitting—rigid and strong—providing ample support for the pipe lines. It has advantages from a practical angle when installing not incorporated in any other solder type fitting. The STREAMLINE Fitting alone possesses the true visual inspection feature whereby the mechanic can tell at a glance that the joint he has just made is leak-proof without resorting to an actual pressure test. He knows too when the proper amount of solder has been used, because the conditions and tolerance on each side of the feed hole are the same. When the solder appears at the outer edge of the fitting, it is proof that it also has traveled the same distance to the pipe shoulder.

STREAMLINE Copper Pipe is not commercial copper pipe. It is a greatly improved product of uniform diameter and consistently close tolerance.

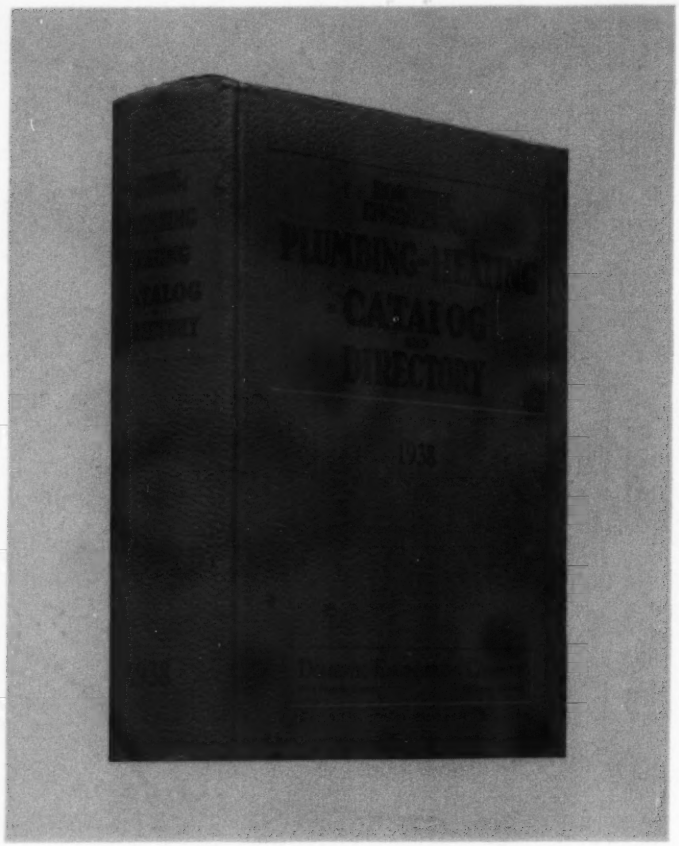
STREAMLINE Solder Fittings are manufactured in sizes from ¼" to 12" inclusive, and in a complete range of reductions in tees and elbows. You connect directly to the smaller or larger pipe lines without the use of adapters with their additional expense both for material and labor. A PERMANENT JOB—A LESS EXPENSIVE JOB—AND A MORE WORKMANLIKE JOB.

Use STREAMLINE Copper Pipe, connect it with STREAMLINE FITTINGS—ALWAYS.

Manufactured in Canada Under License by
CANADA WIRE & CABLE CO. LTD., TORONTO, CANADA

Best FOR ALL INDUSTRIAL PIPE LINE SYSTEMS

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN



Size 8½" x 11"—Letterhead Size—Bound in Fabrikoid

Only a Limited Supply Available

The 1938 edition of Domestic Engineering Plumbing and Heating Catalog-Directory has been revised and is brim full of all new necessary purchasing and specifying data.

Innumerable changes in prices and additions of new items have taken place in the last year. You will find that the items listed on the Catalog-Directory pages are clearly described and generously indexed—which makes it easy for you to order and specify from the information that is at your fingertips in the Plumbing and Heating Catalog-Directory.

The new 1938 Domestic Engineering Plumbing and Heating Catalog-Directory will more than pay for itself in the time and money that you will save by using it as a daily, handy reference volume . . . for figuring of specifications as well as in actual work on the job.

Only a limited supply is available. We urge you to order your copy by return mail so that you are assured of receiving your copy of Domestic Engineering Plumbing and Heating Catalog-Directory—the only volume of its kind which is published exclusively for and distributed to the Plumbing and Heating Industry.

Price $5 — postpaid

The Only

CATALOG-DIRECTORY PUBLISHED EXCLUSIVELY *for the* PLUMBING & HEATING INDUSTRY

• • •

What the 1938 Edition Contains:

MANUFACTURERS' CATALOGS

Section I contains an *increased* number of Manufacturers' Catalogs offering buying and specifying information which are illustrated with up-to-the-minute information.

TABLES and RULES

Section II contains an *enlarged* technical data section in which you will find for easy reference over 100 standard rules, tables, charts, and layout diagrams . . . information which you use every day in plumbing and heating specifying work.

CLASSIFIED DIRECTORY

Section III contains a most complete Classified Directory of several hundred pages of virtually every known product in the Plumbing and Heating Industry. This section is so classified and cross-indexed that it takes but a few moments to locate the manufacturer of any plumbing and heating item.

TRADE NAMES

Section IV—a new Trade Name Section which has been compiled *separately* and shows not only the trade name, but also the item to which it is applied and the manufacturer's name and address.

NAMES and ADDRESSES

Section V contains names, street addresses, city and state of all known manufacturers of plumbing and heating items.

ORDER YOUR DIRECTORY NOW

DOMESTIC ENGINEERING CO., 1900 Prairie Ave., Chicago, Ill.

CHICAGO FAUCET NEWS

Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill. Vol. 6, No. 5

All parts of Chicago Faucets subject to wear are incorporated in a standardized, removable, interchangeable operating unit and are as easily renewable as an electric light bulb.

NEW REVOLUTIONARY AMAZING

PATENT PENDING

Improves the character of tap water!

SOFTFLO Faucet Spout End

All Chicago Swing-Spout Sink Faucets are now available with Softflo Faucet Spout End, when so ordered, at only small additional cost.

SPLASHLESS

The Softflo Spout End works a miracle in its elimination of splashing. Its stream, even at maximum volume and at high pressure, spreads on the sink bottom or on other surfaces without splash or spatter.

NEUTRALIZES FOREIGN FLAVORS

Because of its aeration of water passing through it, it greatly neutralizes foreign tastes and odors such as chlorine or sulphur by releasing them with the air bubbles. Thus it renders water more palatable for drinking, mixing with beverages, tea, coffee or cocoa, and for cooking.

IMPARTS FEELING OF "SOFT" WATER

The function of the Softflo Spout End is to add oxygen to water passing through it. This added air is in the form of myriads of tiny bubbles, thus greatly reducing the harsh, alkaline "feel" of the water and producing lather more abundantly when mixed with soap chips or powder. It is not claimed that the Softflo transforms hard water to soft by removing the chemical elements that render it hard; but by the addition of air bubbles the water feels "soft" and agreeable to the touch.

CLARIFIES WATER

Clean water passed through the Softflo Spout End is relieved of any cloudiness or murkiness, becoming instantly clear, white and sparkling — the result of oxygenation.

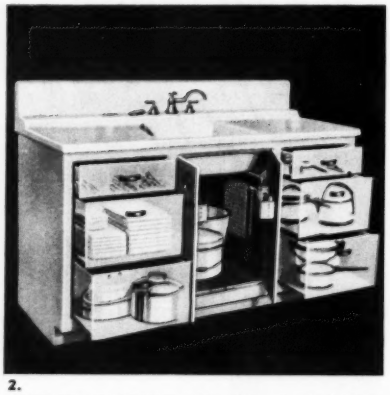
MAKE YOUR OWN TESTS

These claims are actually conservative, though they may seem hard to believe. We have no desire to impress merely the credulous. So don't accept our claims purely on our "say so." You can satisfy yourself, right in your own office or home, that the Softflo Faucet Spout End does all these things — and more. Order a faucet equipped with one today and convince yourself.

"TOO MUCH TIME AT THE SINK? LET ME HELP YOU PLAN A TIME-SAVING KOHLER KITCHEN"

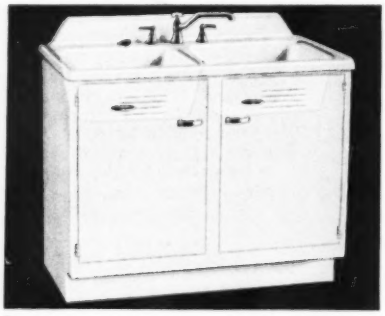
1.
MASTER PLUMBER: There's no excuse for old-fashioned kitchen drudgery these days. You can have a Kohler kitchen that's neat, efficient and *modern* at surprisingly low cost. A new Kohler sink and Kohler steel cabinets will work wonders. They'll cut your time in half.

CUSTOMER: The other day I read an advertisement in *The Saturday Evening Post* about a Kohler sink. I think it was the Camberley. May I see it?



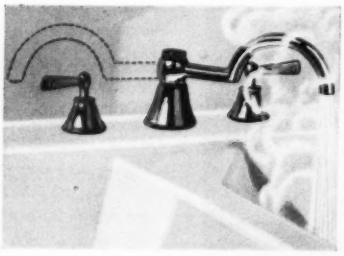
2.
MASTER PLUMBER: Yes, indeed. And it's a beauty. Plenty of cabinet room for pots, pans, most everything. There's a handy ledge clear across the back for soap and cleanser, tumbler and brush. Double drainboards too. Then there's a disappearing rinse hose and a Kohler Duo-strainer for hard-to-pick-up debris. The toe recess puts you right up next to the sink.

CUSTOMER: It's certainly all the advertisement said it was.



3.
MASTER PLUMBER: And more. But now let me show you Kohler's new double-compartment sink, the Wellwin. One compartment for washing dishes, the other for rinsing. Adjoining cabinets serve as drainboards. Mixing faucet reaches both compartments. Note the 4-inch-high back with neatly clipped ends. And just like the Camberley, it has a 3-inch ledge for scrapers, cleaners and soaps; heavy-gauge steel cabinets for . . .

CUSTOMER: You don't have to go any further. I've never seen sinks I liked so much. Will you come up tomorrow afternoon and talk things over with my husband?



Kohler fittings aren't easy to make;

Details are studied for quality's sake.

Each inch is molded with craftsman care:

The result is magnificent chromium ware.

IT'S the same sweet story: Another Kohler Master Plumber has made another Kohler kitchen sale! Kohler fixtures—for kitchen and bath—almost sell themselves. Millions of national advertising messages stir up interest. Kohler ingenuity, Kohler quality, clinch the deal. Get the facts. Then tie in and cash in. Write Kohler Co. *Founded 1873.* Kohler, Wisconsin.

KOHLER OF KOHLER

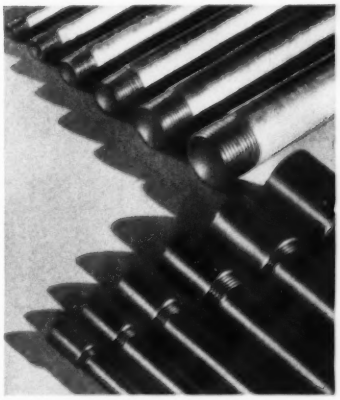
PLANNED PLUMBING AND HEATING

TO ALWAYS USE FRETZ-MOON PIPE . . .

BUILDING owners ordinarily give little thought to the pipe within the walls or down in the basements of their buildings . . . until some trouble develops. Then they think of it and the man who installed it . . . and their thoughts are seldom pleasant.

That's why it pays to use quality pipe . . . pipe that will save future piping headaches . . . Fretz-Moon Pipe. You can do your customers a big favor by using this modern, sound, clean, long-lasting pipe. And you can do yourself a favor at the same time. Because Fretz-Moon Pipe is highly uniform, ductile and easy to work, it cuts installation costs and helps you to make greater profits on bids.

Here's a good plan: Try Fretz-Moon Pipe on several jobs. Notice how easy it is to work. Notice how the men on the job like it. Ask your jobber for Fretz-Moon Pipe. If he doesn't stock it, write us.



You can obtain Fretz-Moon Pipe in both standard and *extra long lengths*, in steel or copper-bearing steel, and in black finish or with a tight, non-scaling galvanized coating further protected by a coating of lacquer.

Write for detailed information.

FRETZ-MOON TUBE CO., INC.

BUTLER • PENNA.

TRY FRETZ-MOON PIPE—AND KNOW THE DIFFERENCE

A Profitable FOR YOU IN THE

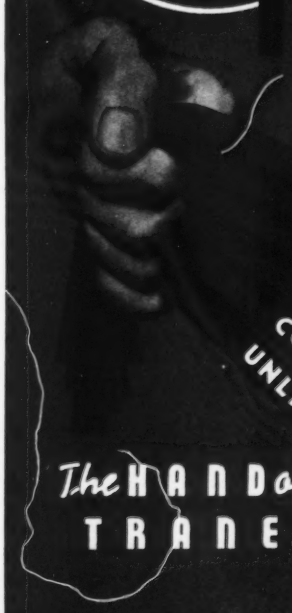
AIR^{n} TRANE OFFERS

A BARE, unvarnished fact is staring the heating industry in the face!

True Air Conditioning—year around air treatment — is rapidly taking the place of *straight heating*. Air Conditioning has gone far beyond the luxury or experimental stage. It is here to stay! It is today a factor in every type of construction job.

How are you meeting this revolutionary change? Are you prepared to step forward and recommend, figure or furnish complete air treatment? If you are not prepared — where will your future business come from?

Trane urges you to add the facilities for complete air treatment installations.



The HAND of TRANE

Let's get

BRANCH OFFICE COOPERATION
THOUSANDS OF INSTALLATIONS
HOW TO SELL AND INSTALL
FIFTY YEARS' EXPERIENCE
COMPLETE EQUIPMENT
UNLIMITED FACILITIES

HEATING AND AIR CONDITIONING TO THE N^{th} DEGREE

SERVING ARCHITECTS, ENGINEERS & CONTRACTORS FROM 70 U. S. OFFICES

Partnership
FIELD OF AIR CONDITIONING

Trane has much to offer that makes for profitable partnership:

Every essential type of equipment in a large variety of sizes.

A name in the trade as a successful manufacturer for over 50 years.

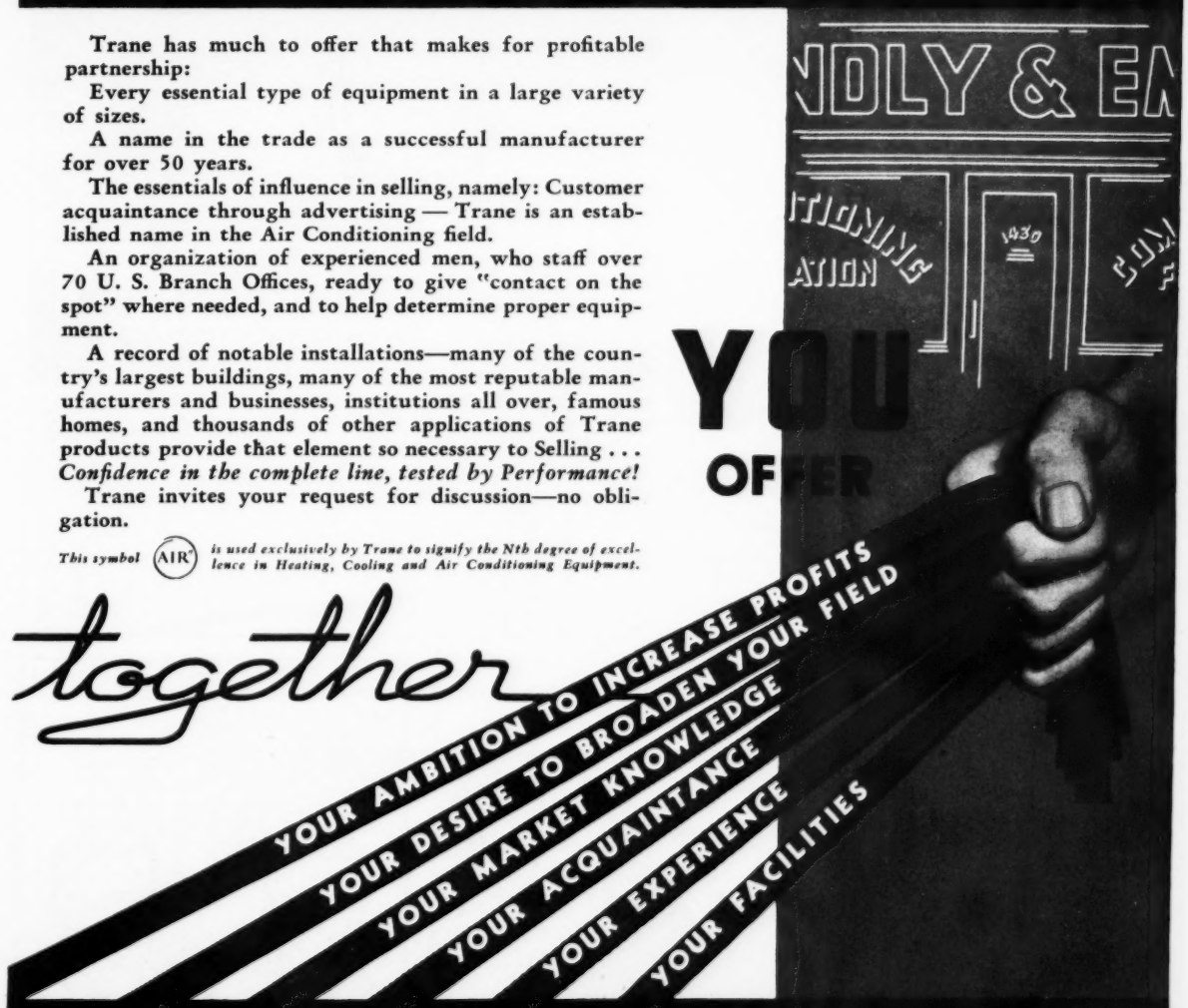
The essentials of influence in selling, namely: Customer acquaintance through advertising — Trane is an established name in the Air Conditioning field.

An organization of experienced men, who staff over 70 U. S. Branch Offices, ready to give "contact on the spot" where needed, and to help determine proper equipment.

A record of notable installations—many of the country's largest buildings, many of the most reputable manufacturers and businesses, institutions all over, famous homes, and thousands of other applications of Trane products provide that element so necessary to Selling . . . *Confidence in the complete line, tested by Performance!*

Trane invites your request for discussion—no obligation.

This symbol (AIR) *is used exclusively by Trane to signify the Nth degree of excellence in Heating, Cooling and Air Conditioning Equipment.*



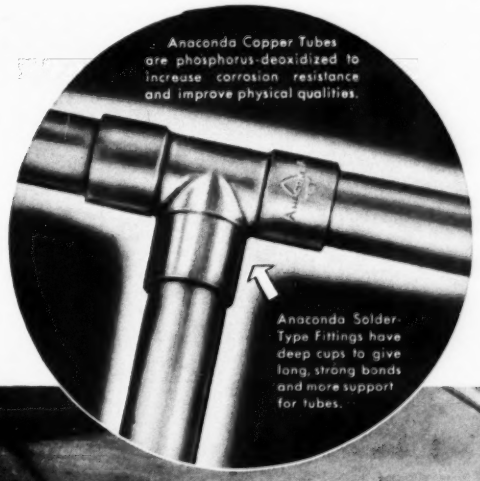
THE TRANE COMPANY, LA CROSSE, WISCONSIN

2006 Cameron Avenue, La Crosse

also TRANE COMPANY OF CANADA, LTD., TORONTO, ONTARIO

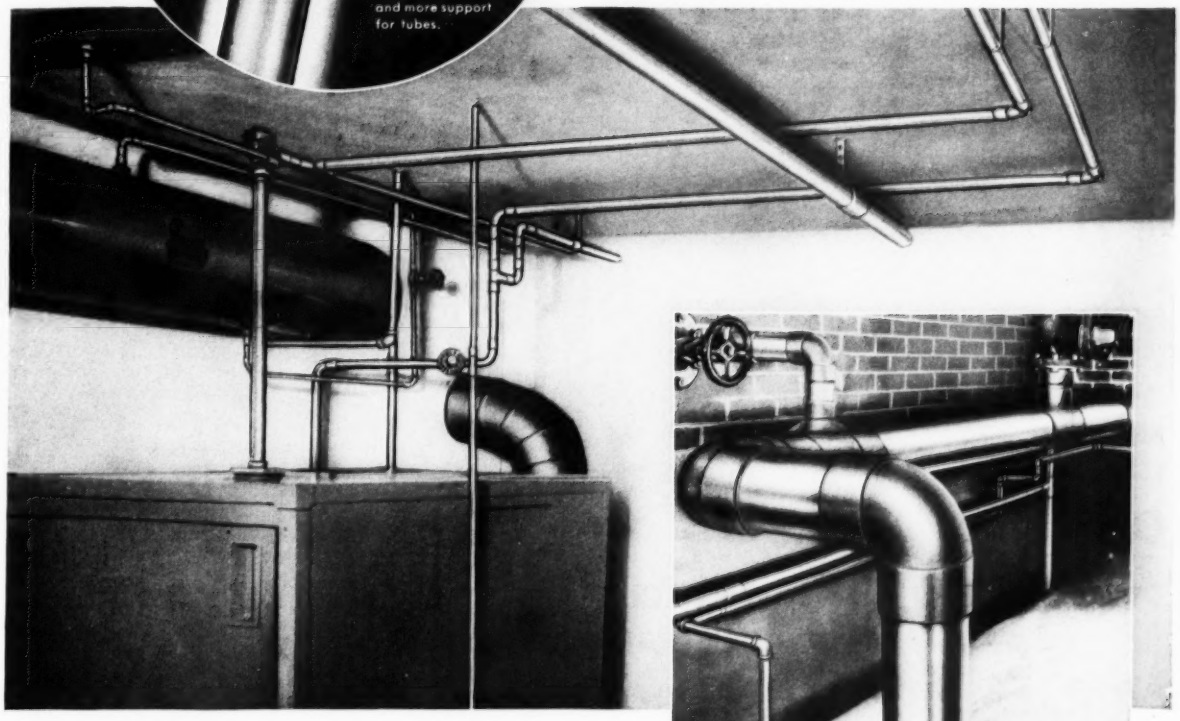
SAY, ED THIS IS THE NIGHT CRANE CO. IS HAVING THEIR DEALER MEETING. LET'S GO OVER
O.K. MAT IF YOU WANT TO. I'LL GO ALONG
MAT
ED
PLUMMER BROTHERS
A CRANE DEALER MEETING BRINGS NEW SALES IDEAS
LOOK AT ALL THOSE NEW PRODUCTS-- I BELIEVE THEY WILL SELL
AND I THINK WE CAN USE THOSE SELLING IDEAS HE'S TELLING US ABOUT
I NEVER REALIZED HOW COMPLETE CRANE'S DEALER HELPS ARE
SURE IS AN INTERESTING WAY OF GIVING US THAT INFORMATION
SAY, ED - WE HAVEN'T BEEN USING THIS CRANE DISPLAY ROOM AS MUCH AS WE SHOULD. I'M GOING TO BRING MRS. PERRY IN TO LOOK AT IT TOMORROW
YES - AND SHOW HER THIS NEW KITCHEN QUEEN SINK I THINK SHE'LL LIKE ONE
THIS IS THE FIRST TIME I EVER SAW SO MANY PLUMBERS TOGETHER IN THIS TOWN
YES, I'VE MET A LOT OF FELLOWS HERE TONIGHT
I USED TO THINK THOSE MEETINGS WOULD BE A WASTE OF TIME BUT I LEARNED DIFFERENTLY
YES, THAT MEETING TONIGHT SHOWED ME SOME BETS WE WERE MISSING
CRANE
VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS
CRANE CO. • GENERAL OFFICES: 836 SOUTH MICHIGAN AVENUE • CHICAGO
NATION-WIDE SERVICE THROUGH 134 BRANCHES AND MORE THAN 500 WHOLESALERS
The experience of the Plummer Brothers is similar to that of many Plumbing and Heating Contractors. Ask the Crane Salesman how Crane Services can help your business.

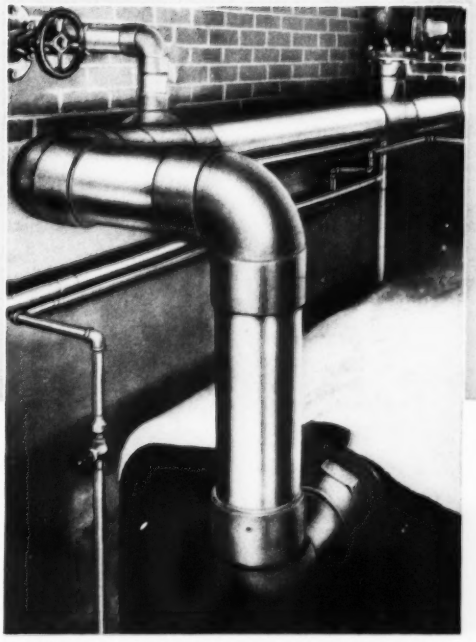
Get all the facts on the new Crane Finance Plan operating under F. H. A. approval, at Government rates.


Anaconda Copper Tubes are phosphorus-deoxidized to increase corrosion resistance and improve physical qualities.
Anaconda Solder-Type Fittings have deep cups to give long, strong bonds and more support for tubes.

4 Good Reasons

for using COPPER TUBE HEATING LINES





(1) Anaconda Copper Tubes and Solder-Type Fittings are being successfully used in hot water, steam, vacuum and vapor-heating systems . . . (2) A complete non-rust installation costs but little more than one of less durable pipe and fittings . . . (3) With forced circulation hot water systems, 10% to 15% greater velocity of circulation is obtained, with the same circulating head . . . (4) Smaller size copper tubes suffice than would be needed with conventional rustable piping. *A complete line of Anaconda Copper Tubes and Fittings is available in sizes from 1/8" to 8".*

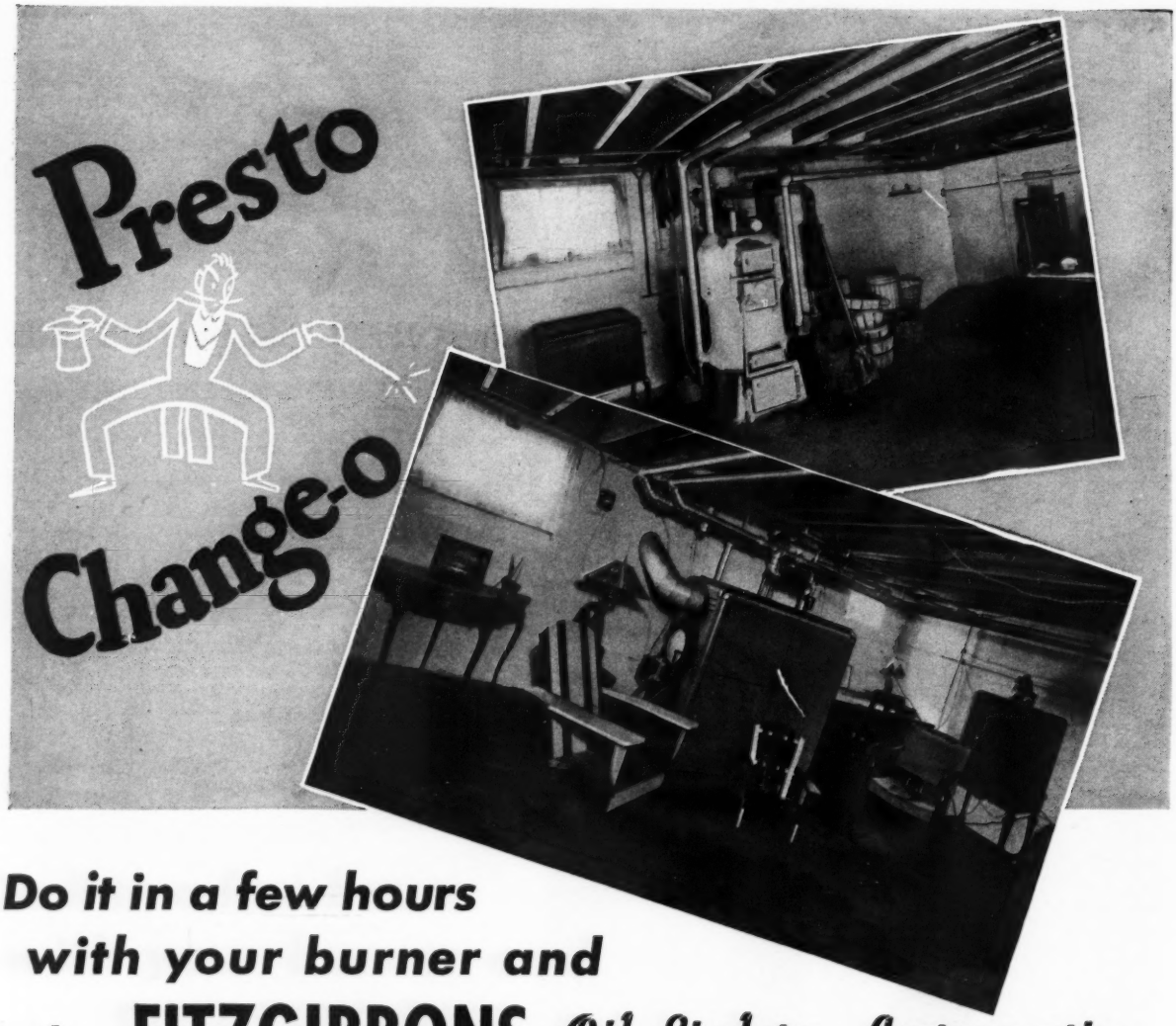
6-inch Anaconda Copper Tubes and Cast Bronze Solder Fittings in the steam heating plant of a large warehouse. Rated output of boiler is 1,368,000 Btu. The other photo shows a residential installation of Anaconda Copper Tubes and Fittings. 3719

ANACONDA
from mine to consumer

Anaconda DEOXIDIZED Copper Tubes

THE AMERICAN BRASS COMPANY · GENERAL OFFICES: WATERBURY, CONNECTICUT

Offices and Agencies in Principal Cities · In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ontario



Do it in a few hours with your burner and the FITZGIBBONS *Oil-Eighty Automatic*

A splendid, modern heating installation installed in mid-winter! Only a few hours without heat—and then, what a difference! Drive ahead NOW for mid-winter sales, show the hesitating prospect that with the single unit steel construction and quick set-up of the Oil-Eighty Automatic boiler, there is no need to wait until spring to transform the cellar into a new and valuable, liveable room, and to change heating worries into heating satisfaction.

•

Get the facts about the Oil-Eighty Automatic, and about the Fitzgibbons Dealer Franchise that is helping many dealers to bigger profits. Write today.

Fitzgibbons Boiler Company, Inc.

General Offices: ARCHITECTS BUILDING, 101 PARK AVE., NEW YORK, N.Y.
Works: Oswego, N. Y.
Branches and Representatives in Principal Cities
Distributed in Canada by FESS OIL BURNERS OF CANADA, LTD., Toronto, Ontario; Montreal, Quebec

Speakman Showers and Fixtures Protect Your Profits . . . *because they assure customer satisfaction through long-lasting efficient service*

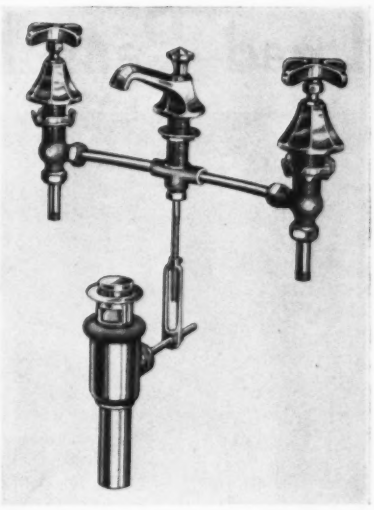
Speakman Showers and Fixtures eliminate profitless call-backs. They protect your reputation—assure customer good will . . . help make every installation a profitable one.

This is due to "What's Inside" . . . to Speakman's painstaking attention to every construction detail . . . its insistence that it must be of the highest quality.

Features like renewable valve seats, swivel discs with encased washers, monel metal washer screws, large waterway areas and accurate machining are Speakman features your customers will probably never see . . . yet they are but a few of the construction details that assure the continuous satisfactory service your customers expect you to provide.

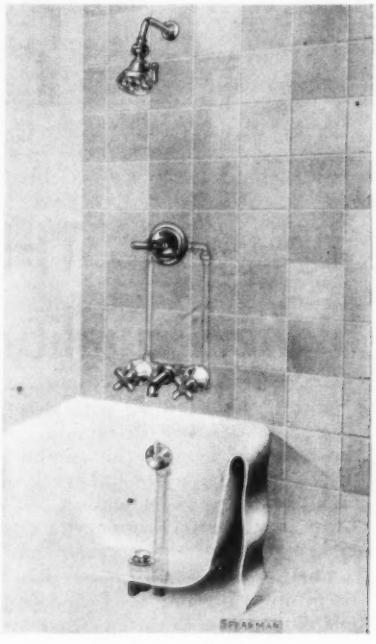
The Speakman lines are broad and complete—prices are competitive. And remember, Speakman maintains a Replacement Service through which you can get at any time any Speakman unit or part that was ever made.

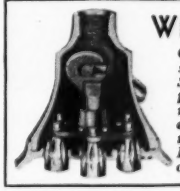
The precision-built Speakman line is a profit line for you. Write for new Sales help material.



● K-8105—*Speakman Diamond Lavatory Fixture with metal escutcheons and four-arm metal handles, raised nozzles 4½ inches long, and Pop-up Waste with metal knob.*

● K-4039—*Speakman Mixometer Shower and Tub Combination with Speakman Anystream Self-Cleaning Shower Head and Act-Easy Pop-up Waste. Valves connected with brass pipe and tested.*

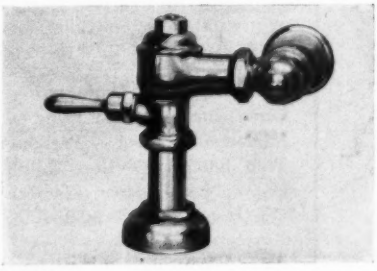


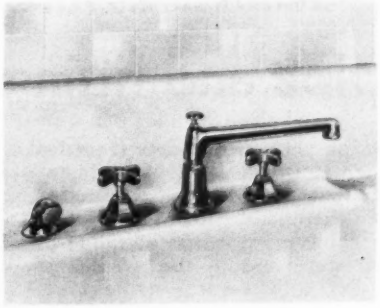


WHAT'S INSIDE

Cross-section view of Anystream Self-Cleaning Shower Head shows the precision-tooled movement of six slotted plungers that determines the type of shower you get. It's "What's Inside" that counts!

● K-9000—*Speakman *Si-Flo Closet Flush Valve. Efficient, noiseless operation is assured by compact piston unit, completely hidden from view, but easily accessible and quickly interchangeable. *Patented.*





● K-5509—*Speakman Deck Type Sink Fixture with Transfer Valve, Hose and Spray. Elevated swinging, non-splash nozzle.*

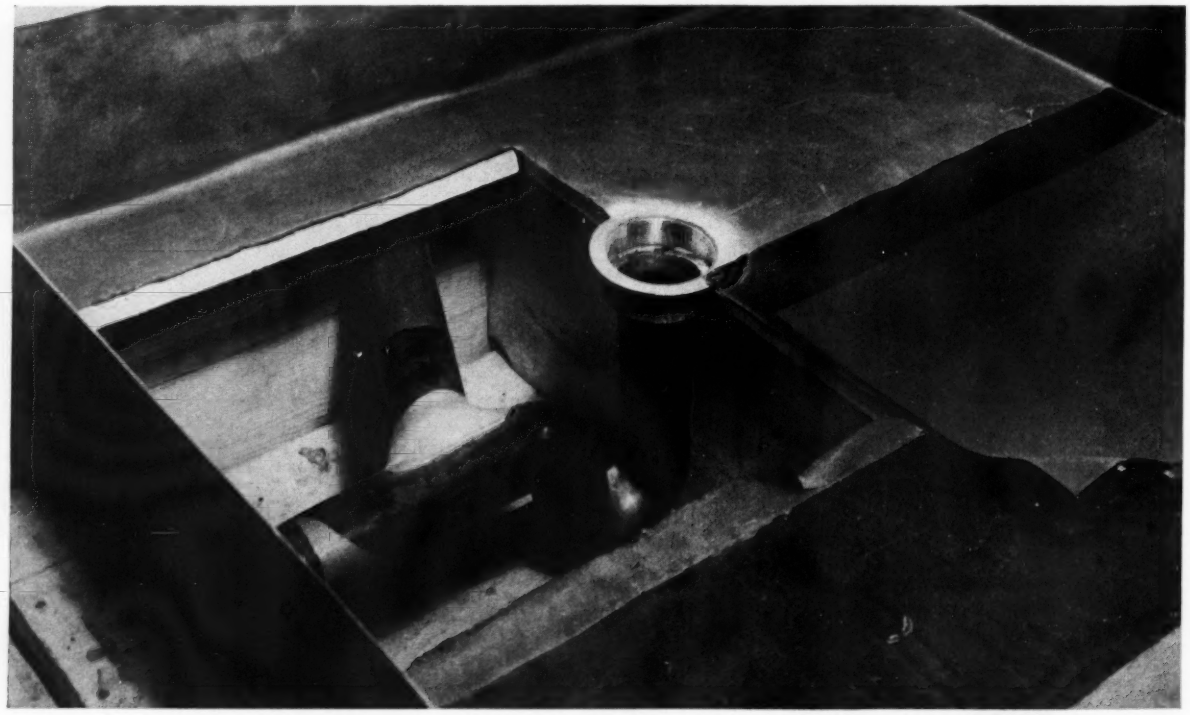
SPEAKMAN *Since 1869*

SHOWERS • SHOWER HEADS • BATH FIXTURES • SI-FLO (SILENT) FLUSH VALVES
LAVATORY FIXTURES • SINK FIXTURES • INSTITUTIONAL AND INDUSTRIAL FIXTURES

SHOWERS AND FIXTURES

DE-1

Lead Pans Mean Leak-Proof Showers



Lead shower pan cut away to show correct installation with asphaltum coating, and lead waste and vent connections.

SEAL OF LEAD INDUSTRIES' APPROVAL

THE SEAL assures highest quality pipe and fittings

A stall shower lined with sheet lead is permanently free from leakage. The metal itself is extremely durable. It is sufficiently flexible to dress down firmly against the sub-floor so that no voids are left underneath which will later settle and crack the finished floor. Sheet lead in the hands of a plumber can be made to fit any shower, regardless of shape or size. Lead is absolutely impervious to moisture and in the average shower makes a seamless waterproofing.

Further to assure satisfaction with your shower installations, connect them up to durable lead pipe and traps that will take up settlement without damage or strain and that minimize clogging. Wiped joints, bonding the sections of lead pipe together, do not vibrate loose, and leak. And you can have the additional protection of the Lead Industries Seal of Approval stamped on lead pipe and fittings that meet our rigid standards of purity and weight. If you line shower stalls with sheet lead and make connections with Seal of Approval lead pipe and fittings, your customers will enjoy permanently trouble-free, sanitary bathing and protection against leakage.

Write for leaflet describing correct method of making lead shower pan installations. Lead Industries Association, 420 Lexington Ave., New York, N. Y.

Use Calking Lead stamped with our Seal of Approval. It meets our rigid standards—assures satisfaction.

The Advantages of Lead Pipe:

Durability — Flexibility — Compactness — Non-Rusting — Minimum Clogging — Prevents Trap Siphonage — Costs Little or No More—Only a Plumber Can Install—Non-Staining.

The Advantages of Wiped Joints:

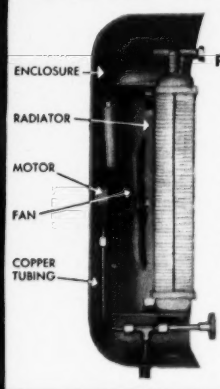
Minimum Resistance to Flow—Makes One Continuous Piece of Pipe—Cannot Loosen—No Threading—No Weakening—A Skilled Operation, No Guesswork.

Remember—EVERY LEAD JOB IS A PLUMBER'S JOB

AMERICAN RADIATOR

ANNOUNCES A NEW TYPE OF HOME HEATING!

The ARCO THERMO SYSTEM



THE ARCO THERMO SYSTEM PROVIDES AIR CIRCULATION—YES!
But not from Room to Room!

A small, silent fan driven by compressed air blows across a copper finned radiator through which warm water circulates. This system not only can warm a room under normal conditions in from three to six minutes, but it *keeps the air moving*—eliminates stratification and maintains even temperature with but 3° difference between floor and ceiling.

THE Arco Thermo System uses a new principle of heat distribution in rooms. With a new unit concealed within the walls of every room it brings to homes instantaneous circulation of warm air, without the disadvantages of ducts.

Thoroughly Tested—Rigorously tested in competition with every other type of heating system, the Arco Thermo System provides advantages not found in many other systems, yet its cost is far below those which give comparable comfort results. Here are some of its unique features:

1. Instantaneous heat from positive heat source in each room. No lag between thermostat's call and heat delivery.
2. Positive air circulation in each room—without ducts.
3. No air recirculated from room to room.
4. Eliminates "Cold 70" and stratification, keeps floor and ceiling temperature from varying more than 3° F.
5. Completely automatic operation.
6. Units are installed flush with wall—need no floor space.
7. All copper piping resists corrosion, cannot rust. Easily installed in old as well as new homes.
8. No headroom sacrificed for ducts in basement. No weakening of structure.
9. Domestic hot water supply from indirect heater, an integral part of boiler.

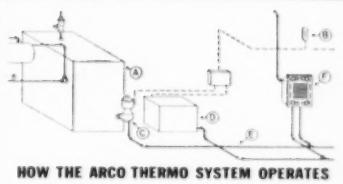
Operating Economy Assured—The Arco Thermo System heats only about one-third the amount of water as the average warm water system. A new fast-acting thermostat relays instantaneous calls for heat. Thus quick pick-up and fast low cost heat are assured.

Comes Complete—Includes an American Radiator Ideal Boiler; complete heat units for every room, including grilles; Arco Copper Fittings and Pipe; Warm Water Circulator; Air Supply Unit; new fast-acting Thermostat—everything you'll need.

Mail coupon today for installation guide which explains the system in detail, shows all component parts and piping diagram.

AMERICAN RADIATOR COMPANY
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.

SCIENTIST MEASURES FLOW OF AIR
from grille with Anemometer. Air sweeps across floor, then rises to ceiling, thus eliminating cold spots—keeping rooms evenly warm from top to bottom.



HOW THE ARCO THERMO SYSTEM OPERATES

Water in the Boiler (A) is maintained between 180° and 190° by temperature control switch operating automatic firing device. Thermostat (B) operates Warm Water Circulator (C) and Air Supply Unit (D), starting them simultaneously. Small diameter copper tubing (E) carries warm water to radiator and air to fan motor, both enclosed in Arco Thermo Unit (F). The fan gently circulates the air of the room through the heated radiator.

featured in the complete line of
AMERICAN RADIATORS IDEAL BOILERS

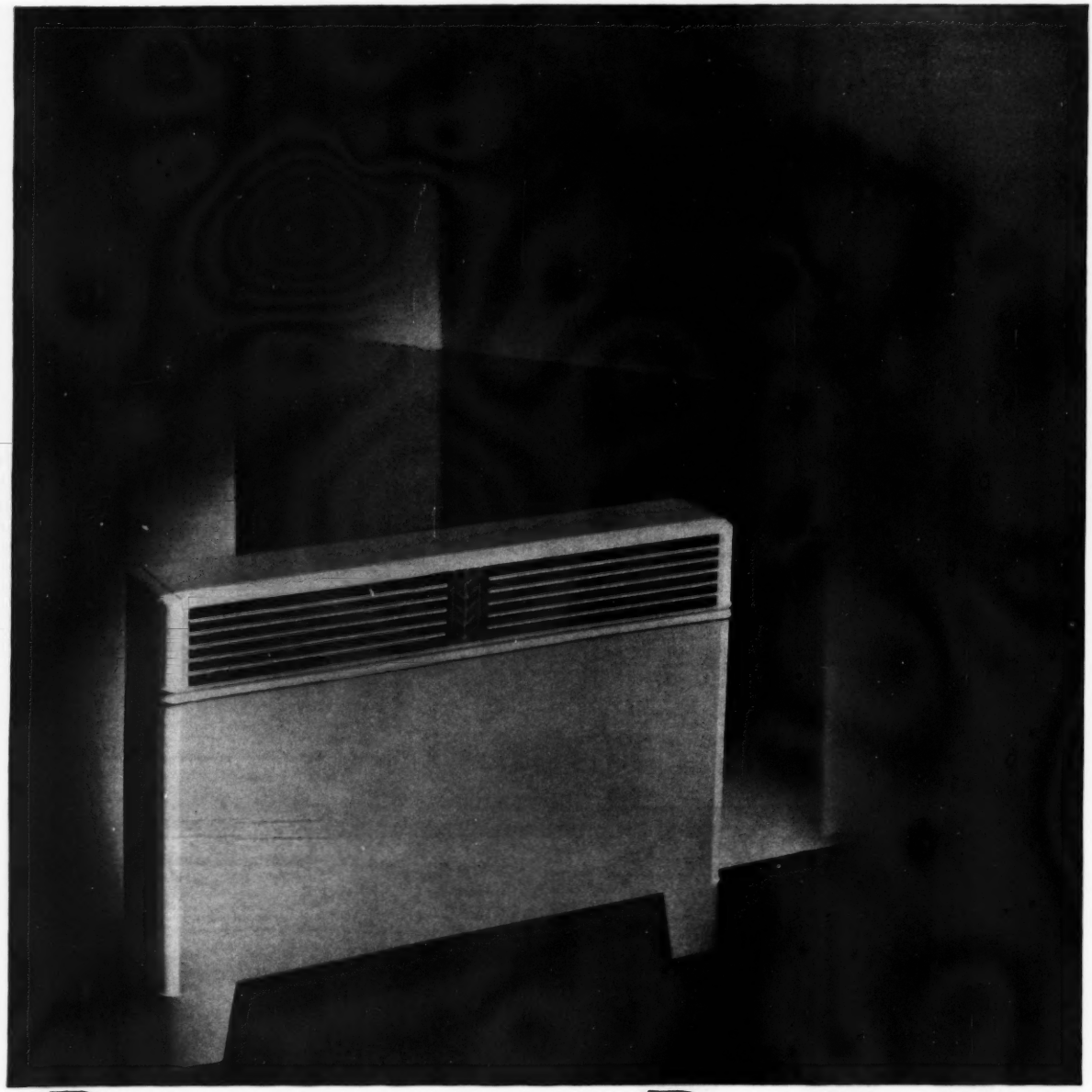
NOW! SELL ON NEW FHA EASY TERMS

No Down Payment • Up to 3 Years to Pay • Payments as low as $10 a month • No Red Tape • No Mortgage • No Cosigners • Government Approved Terms • YOU GET FULL CASH when job is finished • No Recourse • No Holdback • No responsibility for customers' payments.

AMERICAN RADIATOR COMPANY
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.

Please send me installation guide that explains the new Arco Thermo System plus F.H.A. finance forms.

NAME _____
ADDRESS _____
CITY _____
E-1



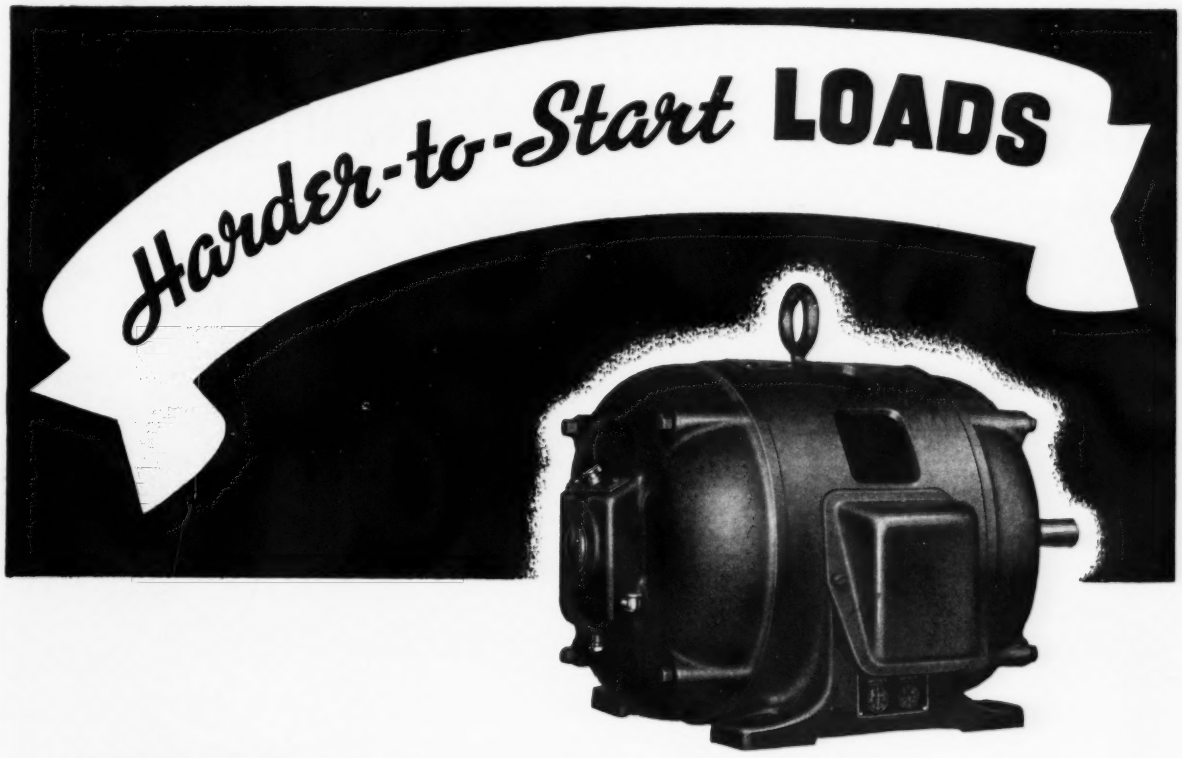
Beautiful, yes...and Practical, too

Graceful lines and pleasing proportions . . . plus an extremely wide selection of *cast* grille designs make the Modine Copper Radiator truly beautiful. Combined with this beauty is the superior heating of copper radiation . . . Convected heat . . . clean, fast, even and instantly responsive to automatic control. Only Modine combines this distinctive beauty of appearance with better heating...Why offer your clients a substitute when Modine Copper Radiation costs no more? Write today for Bulletin 1236.

MODINE MANUFACTURING COMPANY
1722 RACINE STREET • RracINE, WIS.

HEATING, COOLING AND AIR CONDITIONING FOR INDUSTRIAL, COMMERCIAL AND RESIDENTIAL APPLICATION

MODINE
COPPER RADIATION



"FREON" REFRIGERATION COMPRESSORS

Some people call this THE "Freon" Compressor motor—because it WILL *start, accelerate and pull the load,* even when subjected to the severe starting and varying operating conditions which we know from broad experience are often present in any Air Conditioning installation.

It is planned with the necessary torque characteristics which are demanded in a motor that must drive the most efficient refrigeration compressors designed by the country's leading Air Conditioning Engineers . . . As a result thousands of these motors—in all standard horse power ratings—are widely used to power all kinds of equipment which come under the broad classification of Air Conditioning.

Available in sizes 1/6 to 300 horse power, Single, 3-Phase and Direct Current, Conventional Open and Hermetically Sealed-in Types.

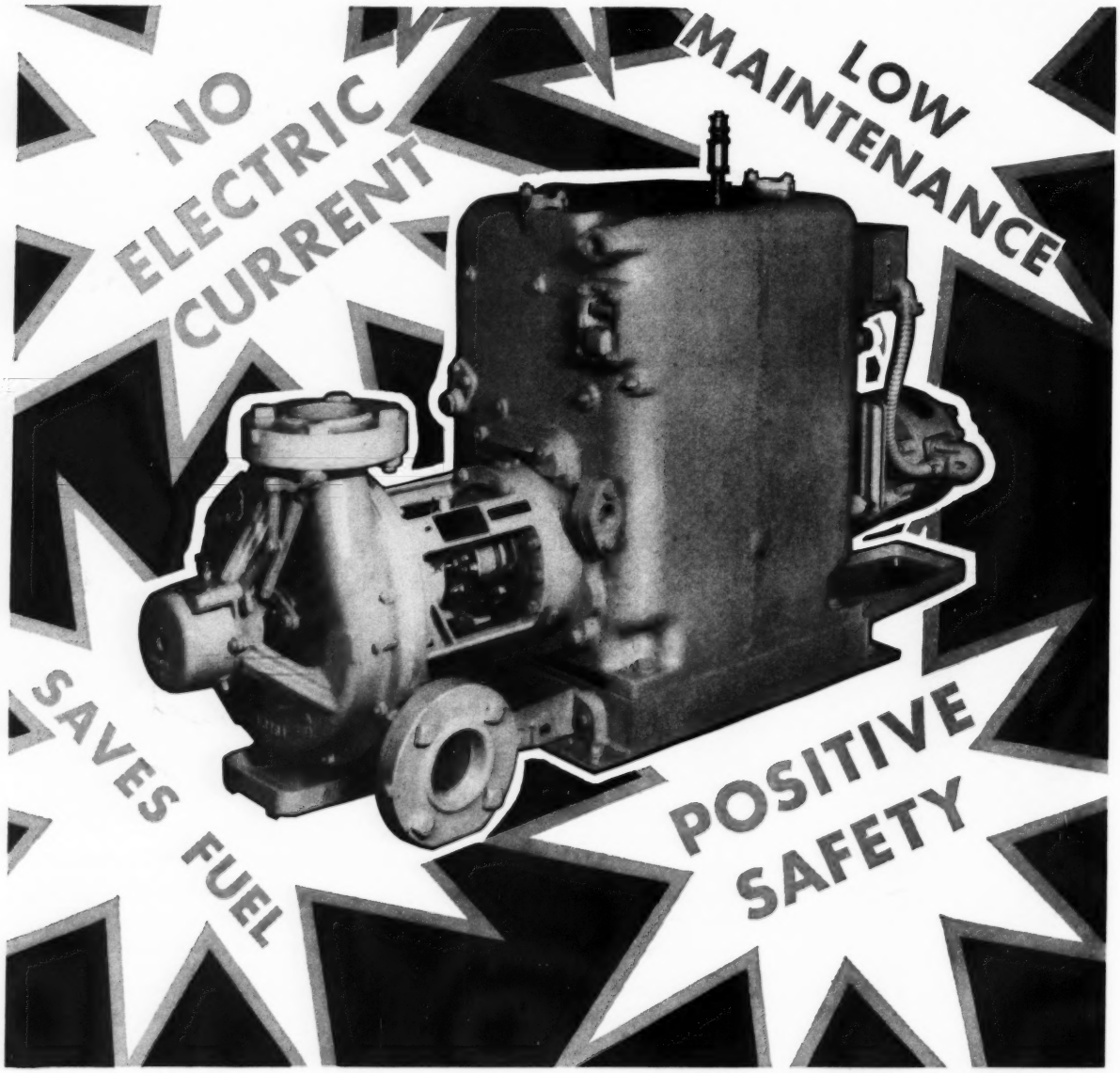
Convince yourself of the value of these Century Motors—test them on any harder-to-start job and see how they start and pull the load up and over the hill quietly and without evidence of strain.

Write our General Office for further particulars, or call one of our convenient branch offices, located in principal cities.

Century MOTORS

CENTURY ELECTRIC COMPANY
1806 Pine Street • • • St. Louis, Mo.
Offices and Stock Points in Principal Cities

Supply Steam from any System runs the new Nash Heating Pump.



The Nash Vapor Turbine Return Line Vacuum Heating Pump requires no electric current, eliminating the one biggest heating pump operating expense item. The motive power is a special turbine operating on steam direct from the heating system. Steam used is returned immediately to the system for heating, with little heat loss.

But the important saving promoted by the Nash Vapor Turbine is in the system itself, for this is the only heating pump that can operate continuously with economy. This uniform circulation means a big saving in steam. This pump has one moving part, no internal wearing parts, and no internal lubrication. Send for free Bulletin No. 246.

THE NASH ENGINEERING COMPANY

SOUTH NORWALK, CONNECTICUT, U. S. A.

Another Big Department Store Installs Fairbanks Renewable Valves

The foresight that assured the high efficiency of the great John Wanamaker stores has again been demonstrated by their choice of Fairbanks Renewable Valves in their Philadelphia Store.

It does not require a shrewd buyer to see that the Renewable features and rugged construction of Fairbanks Valves will save money and assure longer, more reliable performance.

Among the buildings equipped with Fairbanks Valves are many hundreds of the largest structures—such buildings as

Saks Fifth Ave.	Western Union Tel. Bldg.	Elks Newark Club	Coronado St. Louis Hotel
Paramount Theatre	New York Telephone Co.	Hotel New Yorker	Fifth Ave. Hospital
Hotel Pennsylvania	Standard Oil Bldg.	Tudor City	Fidelity Phila. Trust Co.
Int. Tel. & Tel. Bldg.	Albany State Office Bldg.	Internal Revenue Bldg.	Hotel Commodore
			Essex County Hospital

Fairbanks Valves have given satisfactory service for many years in the above, and hundreds of other important buildings.

The reputation of Fairbanks Valves for dependable performance, long service and low upkeep cost is national.

Fairbanks Valves are carried in stock for quick delivery by distributors in all large cities.

We'd like to send you our Catalog No. 21. Please write for a copy or mail the coupon.

THE FAIRBANKS COMPANY

Valves, Dart Unions, Hand Trucks and Wheelbarrows

395 Lafayette St., New York, N. Y.

Boston, Pittsburgh—Distributors in Principal Cities

Factories: Binghamton, N. Y. Rome, Ga.

THE FAIRBANKS COMPANY
395 Lafayette Street, New York, N. Y.

Without obligation on our part, kindly send a copy of your Catalog No. 21.

Name .....

Address .....

City..... State.....

Thanks:
"We look forward each month to receiving our copy of DOMESTIC ENGINEERING and always find some valuable information in each issue."
H. D. S.

Between Ourselves

Ideas and Ideals . . . which make up . . . this Issue . .

This Month's Cover

DOMESTIC ENGINEERING'S cover series devoted to matters of interest to the plumbing and heating industry, is continued this month with a scene showing the sales opportunities in the new FHA. Customer interest in modern plumbing and heating equipment always is present, but in times of business recession increased merchandising efforts and thought are necessary to keep that customer interest at a pitch which results in normal, satisfactory business volume.

At the present time, contractor-dealers everywhere have an opportunity to build up customer interest to a high sales pitch; they have the chance to dramatize the advantages of remodeling plumbing and heating now. The nub to this situation is, of course, the new FHA. This month's cover serves to illustrate how contractor-dealers may get into the FHA sales picture and so direct their merchandising efforts that they keep plumbing and heating products as the logical first choice.

Federal Survey

A few of the figures in the plumbing survey report on Federal buildings in New York City and Detroit read as follows: of 24,664 plumbing fixtures of all types inspected, 16,896 were judged as possible hazards to health; of 7,680 lavatories, 6,547 were disapproved for possible health hazard; of 6,678 water closets inspected, 6,675 were disapproved for possible health hazard.

On the face of it, the report is frightening—most assuredly so in the case of the average layman or individual unacquainted with plumbing and the plumbing industry.

Certainly the report is a serious matter which reveals conditions which can and must be corrected before an epidemic should result. It calls forth the necessity of other surveys in cities besides those already studied. But there are certain factors which must be taken into consideration in reading the report.

First of all, in neither New York City nor Detroit are there above the average number of cases of amebic dysentery. Typhoid fever and other water borne diseases are practically non-existent. There also is the factor that fixtures and installations which have been labelled "hazardous" in the report have different degrees of danger. Undoubtedly there are conditions in the buildings studied which may become hazardous overnight. But just as certainly there are other conditions which will not be actual dangers for the next half century before the necessary conditions to make them so would be present.

Certainly one thing should not be overlooked in evaluating the report. Certain plumbing installations have been termed hazardous in the light of today's plumbing advancement, but the term has been applied to installations which were good practice at the time they were made. Of course, these installations may have been made some time ago.

These statements have not been made in an attempt to minimize the report or gloss over actual dangers to public health which do exist. The report stands as a definite step forward in the advancement of public health, but if not explained, it will stand as an indictment of the plumbing industry in the mind of the average layman and this is unjust. The fact still holds true that plumbing and public health cannot be divorced; consequently, the report coming out of this Federal survey adds emphasis to the position of plumbing rather than the opposite.

Collection Letters

One of the feature articles in this issue is built around collection methods and how they can best be planned to achieve their purpose for contractor-dealers. Collection work at best is a difficult problem. Unless skillfully handled there is the danger of antagonizing good customers; the constant danger that certain accounts will prove to be uncollectable; and the threat that the contractor-dealer will have to have outside aid in the collection of his accounts with a resulting increase in his cost of doing business.

The article which appears this month develops proper methods of approach to be used in collecting accounts by mail. Such a practice when handled in the right manner still has the highest margin of return.

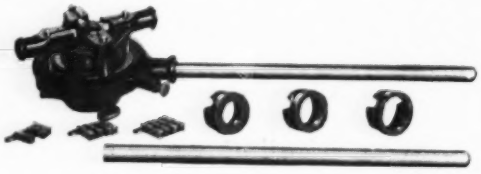
Your Editor

for removing seepage water
PENBERTHY PRODUCTS
PENBERTHY AUTOMATIC CELLAR DRAINER
(Water or Steam operated)
Made in 6 sizes
PENBERTHY AUTOMATIC ELECTRIC SUMP PUMP
Made in 6 sizes
Copper and Bronze Throughout
Sales Active
PENBERTHY Products are Sales Active . . . they have all the qualities that appeal to customers. They also offer you a substantial profit, and stay sold.
Sell a Penberthy Automatic Electric Sump Pump or an Automatic Cellar Drainer wherever seepage water accumulates. Show your customers the many advantages and economies of hot water heating plant modernization with these Penberthy Specialties.
Jobbers everywhere carry Penberthy Products in stock.
PENBERTHY PRESSURE AND RELIEF CONTROL
Made in 3 Models
for modernizing hot water heating systems
PENBERTHY REDUCING VALVE
Made in 9 Models
PENBERTHY RELIEF VALVE
Made in 14 Models
including Dead End Type
Constructed of High Grade Steam Bronze

PENBERTHY INJECTOR COMPANY

Manufacturers of **QUALITY PRODUCTS** *Since 1886*
DETROIT, MICHIGAN • *Canadian Plant,* **Windsor, Ont.**

TOOLS YOU BUY AGAIN



"TOLEDO" No. 1A 1" TO 2" RATCHET THREADER

The "TOLEDO" No. 1A 1 to 2 inch Ratchet Threader, has for over 30 years been the most popular 1" to 2" threading tool on the market. It has been the standard by which many other 1" to 2" tools have been patterned.

Using a separate set of dies for each size pipe, it threads so easily a boy can cut a 2" thread with same, and with the ratchet can be used in even confined quarters.

The 2" dies are made of high speed steel. It is furnished with two tubular handles, and can be used either as a plain die stock or with the ratchet.

The "TOLEDO" No. 1A Ratchet Tool complete 1 to 2 inch inclusive sells at a net price of but $11.25 F.O.B. distributor's stock.

"TOLEDO" DIES FOR No. 1A AND No. 1BR ARE CAREFULLY HOBBED AND GROUND. 2" SIZE MADE FROM HIGH SPEED STEEL

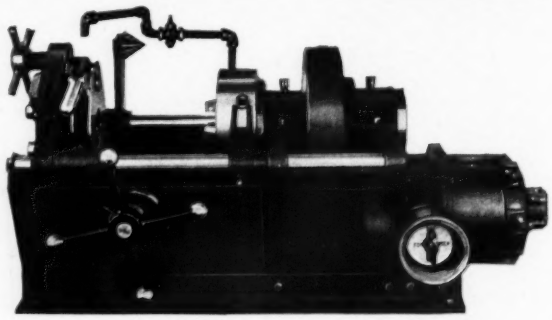
The "TOLEDO" No. 1BR 1 to 2 inch Ratchet Threader is of the same general design as the No. 1A, except for the die head and the new type pipe holder.

No bushings are required. Three broad-faced chuck jaws with size-marked guide posts and large wing head set screws make for easy, accurate centering of the tool on the pipe.

Like the No. 1A tool, the No. 1BR uses a separate set of dies for each size pipe, which is the best practice from all practical experience. It assures easier cutting, longer die life, and smoother, cleaner, more perfect threads.

The "TOLEDO" No. 1BR tool complete 1 to 2 inch inclusive sells at a net price of $15.00 F.O.B. distributor's stock.

"TOLEDO" No. 1BR 1" TO 2" RATCHET THREADER



"TOLEDO" No. 999 2" POWER PIPE MACHINE

MODERN—EVERY INCH

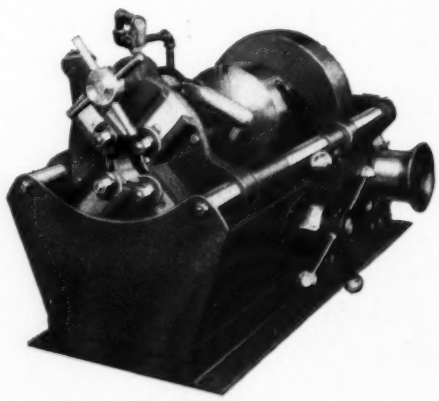
The "TOLEDO" No. 999 2" Portable Power Pipe Machine is modern all the way.

Furnished in two models. Super model has a separate quick-opening die head and dies for each size. Standard model has a separate non-opening die head and dies for each size.

Super model threads 2" pipe in 22 seconds. Standard model threads 2" pipe in 30 seconds. Both cut off 2" pipe in 10 seconds. Smaller sizes relatively fast.

Four blade cut-off. Round renewable ways. Safety friction gear prevents damage in event of overload. Direct gear drive. Centrifugal oil pump direct driven from motor. Thread length indicator. All controls in starting switch.

The ideal small portable power pipe machine for use in the shop or out on the job. A postcard brings complete details and the low net price.



FOR PRECISION—SPECIFY A "TOLEDO" No. 999

THE TOLEDO PIPE THREADING MACHINE CO.

TOLEDO, OHIO NEW YORK OFFICE & DISPLAY, 72 LAFAYETTE ST.

"TOLEDO"

TRADE-MARK REGISTERED

YOU'LL DO BETTER WITH A "TOLEDO"

Our Industry

March, 1938

It Can Happen Again

WHAT happened in 1934 and '35 can happen today.

Then, business had scraped bottom and was lifting out of the depression. The construction industry was badly in need of some sort of stimulant. Plumbing and heating volume was dependent upon remodeling and repair work. Sales were made, one after another, and with almost equal regularity contractors-dealers were told by prospects that unless they had some way of financing the work, the project must be forgotten.

With the advent of FHA, credit was opened up. Borrowing money for sound projects by sound people was made easy. Time payments were liberalized. Financing charges and interest rates appealed to those who were on the market for loans. Money started to flow and the old prospects, which had been killed because of an inability to finance the jobs, became new sales.

Without reaching the 1932-'33 depths of the past depression, the current recession has brought about numerous parallel conditions. Indications are that the bottom has been scraped and definite improvements are being brought about. Of particular interest to the construction industry at this time, is the new and liberalized FHA. Every indication suggests that this reinstated and expanded agency can do today what it did three years ago.

The modernization provisions of the FHA definitely are in motion. Already loans have been made. It is significant that in 1934, the first FHA modernization loan was made through a contractor-dealer in our industry and was for the purchase and installation of our industry's products. Again, our industry has been first to get under way. To a New York heating contractor-dealer goes the honor of being the first to negotiate a loan, for one of his customers, for the purchase and installation of an oil burner and a heating boiler.

The new FHA contains provision for new construction as well as for the remodeling of existing buildings. Even if the tremendous new building market is disregarded entirely, for the moment, remodeling presents staggering possibilities.

In 1934 and 1935 DOMESTIC ENGINEERING sponsored a prize campaign to stimulate interest in the business-building possibilities in the FHA at that time.

Today, to assist our industry in capitalizing on the new FHA, DOMESTIC ENGINEERING is launching a new prize campaign. In this there will be a place for each branch of our industry.

Under the stimulus of a concerted all-industry effort, three years ago 31.4 per cent of all of the millions of dollars generated through FHA was deflected to our industry.

What happened in 1934 and 1935 can happen again now in even greater measure.

Stokers Plus Oil Burners

HEATING and plumbing contractor-dealers, for years have been engaged in selling what can be termed a heating effect, or heating satisfaction.

In meeting this responsibility, contractor-dealers, in general, have kept themselves in a position of first determining their customer's requirements and then meeting them with equipment and facilities made available by our industry as a whole, regardless of what specific type of equipment might be involved.

Evidence of the trend toward a complete recognition of the soundness of this position is growing. A recent and further indication is found in an announcement of a prominent manufacturer of stokers who states "Our company which founded the 'small' stoker industry 15 years ago will, in March announce the invasion of the oil burner market. Many stoker dealers also sell oil burners. The new selling strategy will enable our dealers to sell both oil burner and stoker buyers. Just as there are some buyers who won't consider oil burners, there are some who won't consider a stoker. The oil burners will save these latter buyers for the stoker dealers."

The responsibility of heating and plumbing contractor-dealers has been and will continue to be that of merchandising and installing what individual customers need, as well as what they want, so that after they get what they buy, they will have the satisfaction they hoped for, and are entitled to.

IT'S HERE—*New*

This article answers questions about product eligibility, financing and participation in local FHA groups under new act

ON February 4 of this year, the amended National Housing Act became effective. Under its provisions, the FHA of 1934, 1935 and 1936 has been liberalized and expanded. Title I of the old Act has been renewed so that repairs and remodelling of existing structures can again be financed with Government insured loans.

What exactly does the enactment of this legislation mean to the plumbing and heating industry? That can best be answered by looking back at the previous FHA. During the time it was in force, our entire industry participated wholeheartedly and capitalized fully on the sales advantages of the Act. A careful estimate has shown that $560,000,000 in business was created under Title I alone of the former Act. An equally careful estimate has revealed that 31.4 per cent of all money spent under Title I was captured by the plumbing and heating industry.

Simple multiplication will show that 31.4 per cent of $560,000,000 is $175,840,000. In addition to this amount it has been estimated that more than $100,000,000 in remodelling and new construction was engendered through the passage of the Act, but financed by loans other than FHA. Consequently, more than $200,000,000 in business was secured by the intelligent merchandising and careful planning of our industry. Other branches of the construction industry competed for every customer's dollar spent under the previous FHA. That our industry was the leader in FHA activity and return shows just one thing—this industry did a better job than its competitors.

What has all this to do with the new FHA? Just this. An equally great, if not greater, opportunity now exists for the plumbing and heating industry than there did in 1934, 1935 and 1936. One basis for this statement is to be found in the comments of leaders who have studied the Act. Clarence M. Woolley, chairman of the board, American Radiator & Standard Sanitary Corp., has said:

"The signing of the new housing bill . . . will have an immediate effect on building, employment and business. This bill makes it easy for any family to buy and own a home. It also will enable thousands of home qwners to improve their homes and enjoy the comfort and economy of modern heating, plumbing and other equipment."

Stewart McDonald, FHA Administrator, has declared along the same lines: "This program should prove a stimulus to the construction industry. . . . The machinery is here for the Government to do its part. The success of the program in the long run, however, depends upon the whole-hearted, voluntary cooperation of private capital and private industry, by which I mean the lending institutions, the material and equipment manu-

These stickers used on all letters, direct mail advertising and other mailing pieces will help to publicize FHA loans as a means of paying for needed remodeling and modernization

FHA; New Sales Possibilities

Illustrated above is the new FHA window display. Designed to fit in with any plumbing and heating equipment, this display should aid merchandising by suggesting FHA insured loans as a means of financing immediate modernization programs

facturers and distributors, the builders and developers and labor."

Besides the fact that our industry got back FHA business in exact proportion to the amount of effort and thought that was expended, the results achieved bear out that every member of our industry had a thorough understanding of FHA and passed that information along to the buying public.

Conditions now are similar to those which existed when the former FHA went into effect. Business is approximately on the same level as it was then, but prospects for building and modernization are in a more receptive frame of mind. It seems, therefore, that the only thing needed is for our industry to step out and capture the large share of the FHA market which it already has demonstrated is possible. So that all the knowledge necessary will be available, a prepared series of questions and answers on the Act is published here. The questions have been divided into three groups. The first two are questions which your prospects will ask you before they attempt to take advantage of FHA. The last group contains information which members of the industry want.

Q.: May more than one loan or one series of loans be made to cover repairs, alterations and improvements upon a single piece of property?

A.: Yes. So long as the amount outstanding at any one time does not exceed the maximum provided by this regulation, any number of loans may be made to cover repairs, alterations and improvements upon any single piece of property, but not more than $10,000, ex-

The window display and stickers shown on these pages are to be used by the industry so that FHA may be dramatized and emphasized for prospects. The window display is constructed of heavy corrugated paper and is printed in red, white and blue. Its dimensions are 3 ft. in height and 5½ ft. in width. These displays sell for $3.95 delivered anywhere in the country. The gummed stickers are to be attached to direct mail material such as letterheads and invoices. They are printed in two colors and cost $1.10 per 1,000, $0.70 per 500 and $0.30 per 200. Orders for this material addressed to The Editor, DOMESTIC ENGINEERING, 1900 Prairie Ave., Chicago, will be sent to the manufacturers of this material and promptly shipped.

cluding financing charges to the borrower, may be outstanding at any time on any such piece of property.

Q.: Is there any limitation as to the maximum amount which may be procured by any one borrower?

A.: No. The maximum amounts refer to the amounts which may be outstanding for advance, as the case may be, with respect of any single piece of property. One borrower may obtain any number of loans on any number of pieces of property subject to prior approval of the Administrator.

Q.: If security, such as a mortgage, is taken, may the actual cost of title search, appraisal, etc., be charged the borrower in addition to the charge permitted?

A.: No. Any such cost as these must be included within the maximum permitted charge to the borrower.

Q.: Do all loans under Title I run only for five years?

A.: Notes may not have a final maturity in excess of five years and thirty-two days from the date of the note, except in the case of savings banks, building and loan associations, co-operative banks and similar institutions. But the maturity date of loans made by such institutions must be for a period and at a rate of return not to exceed that of any standard existing plans of such institution.

Q.: May the date of the first installment and subsequent payments be arranged to coincide with the day on which it will be most convenient for the borrower to meet his payments?

A.: Yes. The date fixed for the start of the periodic payments should be made agreeable to the borrower. An insuring institution may arrange the first payment anywhere from six days to two calendar months from the date the note is made, but thereafter each payment should be made on a regular schedule figured from the date of the first payment.

Q.: Since architectural and engineering services may be included as expenses which may be paid out of the proceeds of a loan, may not such other expenses as fire insurance and taxes also be included?

A.: No. Architectural and engineering expenses are as much a part of the cost of alterations, repairs and improvements as the wages of the labor employed. Expenses such as possible increased fire insurance or taxes as a result of the work done are not costs of the job.

Q.: What information should be revealed in the credit statement which must be filled out by the borrower and supplied to the lending institution?

A.: The credit statement should give specific information about the borrower's income and credit standing and his owenrship of the property, or if he is a lessee,

(Continued on Page 119)

YOU—*Can Participate . . .*

WITH the success background of the previous FHA as a guide, our industry has been quick to capitalize on the recently amended National Housing Act. E. I. Leighton, president and general manager of the Leighton Supply Co., Fort Dodge, Iowa, has been named chairman to organize a better housing committee in his community. The purpose of this committee, one of many to be set up throughout the country, is to sponsor a revival of residential building in local communities.

Mr. Leighton has received the following telegram from Stewart McDonald, Federal Housing Administrator in Washington: "The passage of the new National Housing Act opens the way for a real residential construction program which should carry with it a genuine business revival. The President asks that we again ask your participation as voluntary chairman to organize a better housing committee to immediately sponsor this revival in your community and get its full benefits immediately. Please wire me collect if you accept and letter outlining plan will immediately follow."

The Southwark Plumbing & Heating Supply Co. of Philadelphia, Pa., prepared to participate in the new FHA two months before the bill actually was passed. In December of last year, Mark Shapiro, president of the company, sent out a special letter to contractor-dealers in the area inviting them to attend a meeting on the National Housing Act amendment then in Congress. The letter sent out by Mr. Shapiro read as follows:

"We have advance information that FHA will be back with us on or about January 1, 1938. Now is your chance to cash in on some new business and extra profits! All you have to do is make the contacts and revive your prospects by telling them of the small interest charge."

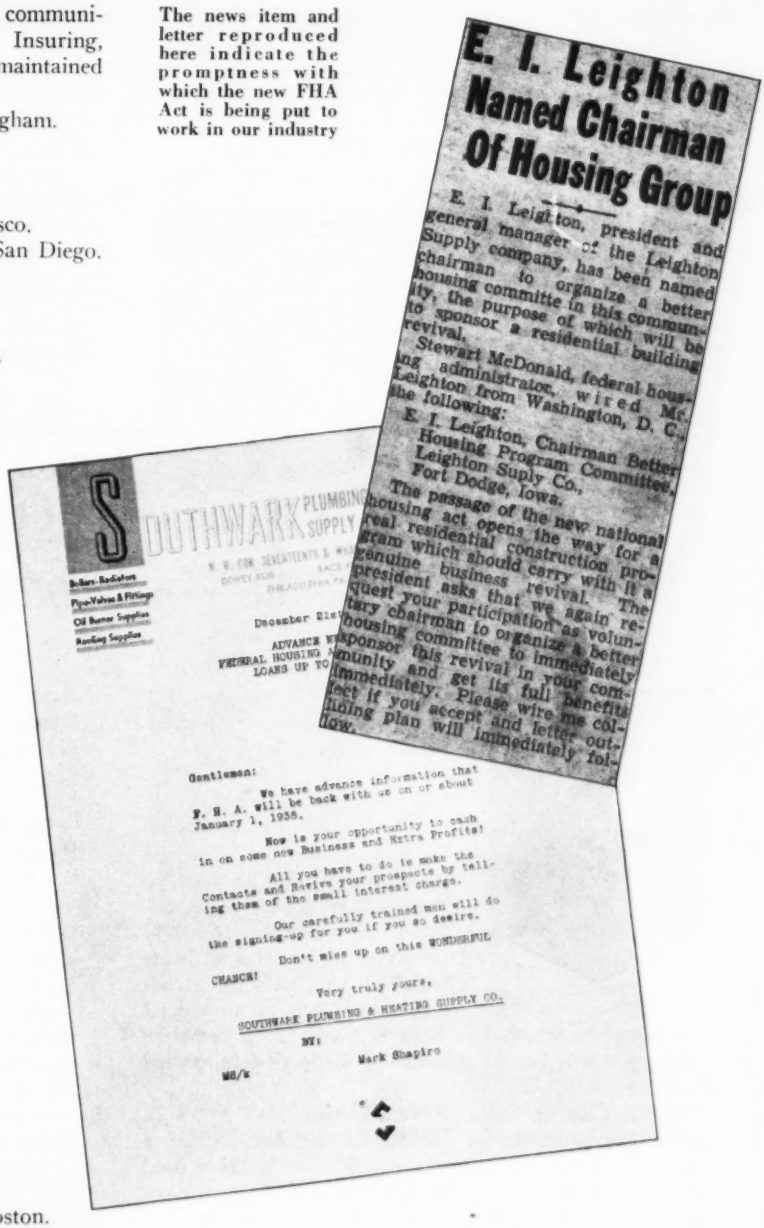
Principal speaker at the meeting was the regional director of the FHA who described the existing Act and gave a resume of the business that had been generated under the old Act.

Since our industry received approximately 31 per cent of all money spent under the previous Act, it is natural that plumbing and heating contractor-dealers should be leaders now that the Act has been revived. Those who already have begun to lay the groundwork for their participation in FHA have followed a far-sighted policy. Others in the industry who wish to learn how they can

become an integral part of FHA in their own communities should consult their local FHA office. Insuring, underwriting or service offices of FHA are maintained at the following addresses:

Alabama: 2105 Third Ave., North, Birmingham.
Alaska: 4-8 Federal Bldg., Juneau.
Arizona: 416 Professional Bldg., Phoenix.
Arkansas: Pyramid Bldg., Little Rock.
California: 433 California St., San Francisco.
Hotel San Diego Bldg., 347 Broadway, San Diego.
302-303 Insurance Bldg., Sacramento.
Mattei Bldg., 1157 Fulton St., Fresno.
756 South Spring St., Los Angeles.
Colorado: 257 U. S. Customhouse, Denver.
Connecticut: 125 Trumbull St., Hartford.
Delaware: Industrial Trust Bldg., Tenth and Shipley Sts., Wilmington.
District of Columbia: Room 100, 1001 Vermont Ave. NW., Washington.
Florida: New Post Office Bldg., Jacksonville.
1508 Dade County Courthouse Bldg., Miami.
Stovall Professional Bldg., Tampa.
Georgia: 10 Forsythe Street Bldg., Atlanta.
Hawaii: 409 Damon Bldg., Honolulu.
Idaho: 401 Idaho Bldg., Boise.
Illinois: Room 1806, 134 North La Salle St., Chicago.
620 Illinois Bldg., Springfield.
Indiana: 17 North Meridian St., Indianapolis.
New Federal Bldg., Gary.
303 Post Office Bldg., Evansville.
258 Federal Bldg., Fort Wayne.
Iowa: Old Federal Bldg., Des Moines.
Kansas: 309 Federal Bldg., Topeka.
915 Beacon Bldg., Wichita.
Kentucky: Martin Brown Bldg., Louisville.
Louisiana: 1220 Hibernia Bank Bldg., New Orleans.
Maine: Exchange Bldg., Bangor.
Maryland: 919 Fidelity Bldg., Baltimore.
Massachusetts: 1033 Park Square Bldg., Boston.
Michigan: 1174 First National Bank Bldg., Detroit.
Minnesota: New Post Office Bldg., Minneapolis.
Federal Courts Bldg., St. Paul.
Mississippi: 500 Lamar Life Bldg., Jackson.
Missouri: 314 Old Customhouse Bldg., St. Louis.
710 R. A. Long Bldg., Kansas City.
Montana: Federal Bldg., Helena.
Nebraska: 225 Post Office Bldg., Omaha.
213 Post Office Bldg., Lincoln.
Nevada: Lunsford Bldg., Reno.
New Hampshire: 9 Capitol St., Concord.
New Jersey: Post Office Bldg., Newark.
306 W. Jersey Trust Bldg., Camden.
New Mexico: New City Hall, Sante Fe.
New York: Sixth Floor, Federal Office Bldg., 90 Church St., New York City.
Home Title Bldg., 90-23 161st St., Jamaica.
County Bldg., Main St., White Plains.
442-444 New Post Office and Federal Bldg., Albany.
728 Marine Trust Bldg., Buffalo.
25 E. Main St., Rochester.
311 Federal Bldg., Binghamton.
North Carolina: Old Federal Bldg., Greensboro.
North Dakota: Post Office Bldg., Bismarck.
Ohio: Old Post Office Bldg., Columbus.
600 Bulkley Bldg., Cleveland.
818 Union Central Bldg., Cincinnati.
New Post Office Bldg., Akron.
New Federal Bldg., Toledo.
306 Post Office Bldg., Dayton.
Oklahoma: 433-444 Key Bldg., Oklahoma City.
Tulsa Bldg., Tulsa.

The news item and letter reproduced here indicate the promptness with which the new FHA Act is being put to work in our industry



E. I. Leighton Named Chairman Of Housing Group

E. I. Leighton, president and general manager of the Leighton Supply company, has been named chairman to organize a better housing committe in this community, the purpose of which will be to sponsor a residential building revival.

Stewart McDonald, federal housing administrator, wired Mr. Leighton from Washington, D. C., the following:

E. I. Leighton, Chairman Better Housing Program Committee, Leighton Suply Co., Fort Dodge, Iowa.

The passage of the new national housing act opens the way for a real residential construction program which should carry with it a genuine business revival. The president asks that we again request your participation as voluntary chairman to organize a better housing committee to immediately sponsor this revival in your community and get its full benefits immediately. Please wire me collect if you accept and letter outlining plan will immediately follow.

SOUTHWARK PLUMBING & HEATING SUPPLY

Boilers-Radiators
Pipe-Valves & Fittings
Oil Burner Supplies
Roofing Supplies

December 21st

ADVANCE INFORMATION
FEDERAL HOUSING ADMINISTRATION
LOANS UP TO

Gentlemen:

We have advance information that F. H. A. will be back with us on or about January 1, 1938.

Now is your opportunity to cash in on some new Business and Extra Profits!

All you have to do is make the Contacts and Review your prospects by telling them of the small interest charge.

Our carefully trained men will do the signing-up for you if you so desire.

Don't miss up on this WONDERFUL CHANCE!

Very truly yours,

SOUTHWARK PLUMBING & HEATING SUPPLY CO.

BY:

Mark Shapiro

MS/k

Oregon: 420 Park Bldg., Portland.
Pennsylvania: Market Street National Bank Bldg., Juniper and Market Sts., Philadelphia.
536 New Federal Bldg., Seventh Ave. and Grant St., Pittsburgh.
1021-1022 Erie Trust Bldg., Erie.
Rhode Island: 202 County Courthouse Bldg., Providence.
South Carolina: Courthouse Bldg., Columbia.
South Dakota: Western Surety Block, 131 N. Maine Ave., Sioux Falls.
Tennessee: 210 Federal Bldg., Memphis.
212 Old Post Office Bldg., Nashville.
208 Post Office Bldg., Knoxville.
Post Office Bldg., Chattanooga.
Texas: New Parcel Post Bldg., Dallas.
First National Bank Bldg., Fort Worth.
National Standard Bldg., Houston.
Milam Bldg., San Antonio.
Utah: First National Bank Bldg., Salt Lake City.
Vermont: Federal Bldg., Burlington.
Virginia: 512 Parcel Post Bldg., Richmond.
Washington: 1817 Exchange Bldg., Seattle.
601 Columbia Bldg., Spokane.
West Virginia: 42-48 Capitol City Bank Bldg., Charleston.
Wisconsin: Plankinton Arcade Bldg., Milwaukee.
Wyoming: Post Office Bldg., Cheyenne.

WHAT—*Products Are Eligible*

TITLE I of the Act is, in some respects, the more complicated of the two Titles. One of the most common questions asked on this Title is what is meant by "existing structure?" This term is used in defining Class 1 loans—"To repair, alter or improve an existing structure or the real property in connection therewith." An "existing structure" according to an official interpretation which has been received is "a complete building which has or has had a distinctive functional use."

Beside Class 1 loans, there are two other types of loans permissible under Title I of the Act. Class 2 loans are to erect new structures exclusive of those used wholly or in part for residential purposes. Class 3 loans are to erect new structures used wholly or in part for residential purposes.

The question which is of greatest interest to the construction field and particularly our industry has to do with equipment classed as eligible expenditures under the Act. A primary list of equipment which is eligible for loans already has been prepared by FHA officials. It is indicated that this list will be supplemented from time to time. Equipment has been divided into two general groupings—"dwelling units" and "commercial and miscellaneous." The list under the first heading is as follows:

Boilers as a part of the system.
Coal stokers.
Doors (including storm doors).
Driveways.
Fences.
Heating systems.
Heat control devices as a part of the system.
Landscaping.
Lighting systems.
Lighting fixtures if a part of the system.
Linoleum when cemented to the floor.
Oil Burners.
Plumbing systems.
Radiation, if part of the heating system.
Ventilating systems.
Walks.
Water heaters as a part of the water system.
Water softeners as a part of the water system.
Wells and cisterns.

Built in—breakfast nooks, bookcases, cabinets, closets, cupboards, incinerators, laundry chutes, laundry tubs, lightning rods, medicine cabinets, mirrors, ironing boards, shelves and ventilating fans.

Under the heading of "commercial and miscellaneous" are the following items of equipment:

Built in—air conditioning systems, ash removal equipment when part of the heating system, barn pens, bins, booths, burglar alarm systems, dust collectors, elevators, escalators, fire alarm systems, fire escapes, fire hose systems (mounted on reels and permanently attached to the water system), sprinkler systems, stalls and troughs.

Items which do not appear in the two lists cannot be classed as ineligible for loans. As has already been indicated, additional listings of equipment will be issued from time to time. If there is any doubt about the eligibility of a certain piece of equipment, written inquiry should be made to the Federal Housing Administration, Washington, D. C.

Since the term "built in" as used in the present listing of eligible equipment and construction might be somewhat confusing it has been defined as referring "to alterations or improvements which constitute a change in the physical structure of the building or become an integral part thereof."

HERE'S HOW . . .

You can now finance your prospect's plumbing, heating, modernization and repair jobs under the New FHA

THE signing of the National Housing Act Amendments of 1938 on February 3, 1938, gave a great stimulus to the heating, plumbing and air conditioning industry. The Act now does not expire before June 30, 1939, unless sooner terminated by proclamation of the President of the United States.

The benefits that were derived under Title I during its previous operation from August 10, 1934, until April 1, 1937, surely have not been forgotten by the great majority of those in our industry, because approximately 31 per cent of the total of something over $560,000,000 which was financed under Title I represented transactions covering products in our particular industry.

Therefore, if such success was brought about through the activities of our industry under Title I's previous operation, it is quite logical to expect continued expansion of activity in modernizing, improving, rehabilitating, repairing and replacement in present existing buildings under the extension of Title I.

Title I as now re-enacted compares favorably with the previous setup, namely, the rate of finance charge remains the same—5 per cent discount; terms of up to 3 and 5 years remain the same, although it has not been found practical by any finance institution to extend terms beyond 3 years on modernization. The rate of insurance to finance institutions remains the same, i.e., 10 per cent guarantee against loss, as was the case at the expiration of the previous enactment. As before, no down payment is required, although permitted.

One requirement formerly not in the regulations is that an installation or completion certificate is now necessary and this must be signed by the purchaser. This was incorporated into the new regulations to protect the owner, to a degree, from conditions that arose under the previous application of Title I wherein, at times, proper installations were not made and, in some cases where contractors after receiving the money failed to make any installation whatsoever. This new requirement is a boon to legitimate contractors and will do a great deal in eliminating unfair competition.

New regulations provide the financing of an amount of $10,000, exclusive of fee, on one piece of property for repair, alterations or the improving of existing structures.

The information requirements covering loan applicants, on forms under the present regulations, are somewhat more extensive than previously, as a result of past experience. The Federal Housing Administration has determined that additional caution and safeguards should be established at the inception of the transaction through the submission of more complete data regarding the applicant. These additional requirements will not affect legitimate prospects, however, but only eliminate those not properly entitled to credit.

Shown above and at the right is L. H. Goldbright of the Plumbing and Heating Finance Corporation. Mr. Goldbright is the author of this article on the new Federal Housing Administration

To _____ Date _____ 193__
(Dealer's or Contractor's Name) (No.) (Street) (City) (State)

The following information is given for the purpose of inducing you to grant credit under the provisions of Title I of the National Housing Act. The approximate amount of credit required by me (us) for _____ months is $ _____

Married _____ Age _____ Number of Dependents _____ How long at present address _____
(Yes or No or Widowed)

Employed by Self ☐ Employed by Others ☐ Name and Address of Business or Employer _____ Telephone Numbers: Business _____ Home _____

How long employed _____ Your Position _____ Name of Superior _____ His Position _____

Yearly Salary or Wages or Net Business Income $ _____ Yearly Commissions $ _____ Rents and Other Yearly Income $ _____ Total Yearly Income $ _____

Source of Other Yearly Income _____ Kind of Business Engaged In _____

Name of previous employer _____ Total time unemployed last three years _____

If engaged in farming, what portion of your income is derived directly from sale of agricultural crops, commodities and live stock $ _____ State at what periods of the year such income is customarily received _____

If in business, name and address of bank at which corporation or firm's checking account is kept _____

Name of Bank at which Personal checking account is kept _____ Account is In name of

Name of Bank at which Savings or thrift account is kept _____ Account is In name of

Amount of Life Insurance $ _____ How long Carried _____ Name of Insured _____ Names of Beneficiaries _____

Cash Surrender Values $ _____ Names of Insurance Companies _____

Name and address of all bank, loan or instalment companies, or others to whom I (we) owe money or have charge accounts with, or am (are) making instalment payments (not including F.H.A. loans).	Account No.	Date of Obligation	Original Amount	Monthly Payment	Unpaid Balance
			$	$	$
			$	$	$
			$	$	$

Address of Property to be improved _____ Year Purchased _____ Purchase Price of Property $ _____

Description and use of above property _____

I (we) certify that the entire proceeds of this loan will be expended as itemized below: (Describe accurately improvements or installation planned or contemplated.) Estimated Cost — Contractors or Dealers Name and Address

$ _____

$ _____

Name in which Title is recorded _____ Assessed Valuation $ _____ Amount of Fire Insurance $ _____

Description of mortgages, other liens or contracts against property to be improved	Held by Name and Address	Maturity Date	Annual Payments Principal & Interest	Amount, if any, in default	Balance Due
			$	$	$
			$	$	$
			$	$	$

Addresses of other owned real estate _____ Estimated Value of Same $ _____

Total of mortgages or other liens against such other owned real estate $ _____ Are any mortgages, liens or leases in default? _____ What arrangements made on any defaults? _____

Do you have any Home Owners' Loan Corporation Mortgages? _____ Are any in default? _____ If so, for how long? _____ What is monthly payment for principal and interest? $ _____

Are you obligated to any other Agency or Department of the Federal Government? _____ Explain _____

Are any payments on such obligations in arrears? _____ Are all owned structures covered by insurance? _____

If property to be improved is rented, from whom and address _____ Date lease expires _____

State whether or not all taxes, assessments, and fire and other insurance premiums are paid-up-to-date (Yes or No) _____ Were you ever a bankrupt? _____ If so, give details of settlement _____

Have you any judgments, garnishments, suits or legal proceedings against you? (Yes or No) _____ If so, give particulars _____

List below any F.H.A. loans obtained under Title I or Title II National Housing Act. If none, state "None."

Note Now Held By	Address of Property Improved	Date of Note	Original Amount	Unpaid Balance
			$	$
			$	$

Are any payments on above in arrears? _____ If so, give particulars _____

Have you made application elsewhere for this credit? _____ From whom? _____ Was application Accepted ☐ Rejected ☐

Are you applying for any other F.H.A. improvement loans at this time? _____ If so, from whom? _____ For what amount? $ _____

Name and address of four business or trade references _____

(Name and Address) (Name and Address)

I (we) authorize you, or any financial institution to which you may desire to offer my (our) note for sale, to obtain such information as you (they) may require concerning the above statement and agree that it shall remain your (their) property whether or not my (our) note is finally accepted by you. I (we) certify no information has been concealed which is essential to a proper decision in this case; that no misrepresentations have been made in this credit statement and that if the loan is granted to me (us) or my (our) note purchased, the ENTIRE PROCEEDS WILL BE USED EXCLUSIVELY IN PAYMENT FOR ALTERATIONS, REPAIRS, OR IMPROVEMENTS UPON OR IN CONNECTION WITH AN EXISTING STRUCTURE. I (we) hereby affirm that the foregoing information is true and correct.

Signatures of Property Owners or Applicant _____ (L. S.)

_____ (L. S.)

Approved by Federal Housing Administration

Residing at _____ (No.) (Street) (City) (State)

NOTE.—This form should be filled out completely, using "No" or "None" where necessary. Form H.P.F.C.—F.H.A.-P (3-38)

USE THIS FORM FOR AMOUNTS NOT OVER $2,500, (EXCLUSIVE OF FINANCE FEE). WHEN CONTRACT IS ISSUED BETWEEN THIS PART, PURSUANT TO YOUR BELIEF OF AMERICAN EQUITABLE & STANDARD SANITARY CORP., SUBSIDIARY COMPANY

Fig. 1—The new Property Owner's Credit Statement has approximately 33⅓ per cent less entries than the regular FHA form

RATE CHART

EXPLANATION

No down payment is required but a down payment can be made if purchaser desires to make one. The number of monthly payments should be determined by the purchaser's ability to pay and should not be for a greater number of months than is necessary. Amounts over $2,500.00 cannot be financed on this Federal Housing Administration Form. The minimum monthly instalment is $10.00. Finance fees apply on the amount financed which is the cost of the job less the down payment, if any. To find monthly instalment, divide amount of Note by number of months.

FINANCE FEES ON FEDERAL HOUSING ADMINISTRATION TRANSACTIONS

Amount Financed	12 Mos.	15 Mos.	18 Mos.	24 Mos.	27 Mos.	30 Mos.	33 Mos.	36 Mos.
$ 1	$ .05	$ .06	$ .07	$ .10	$ .11	$ .12	$ .13	$ .14
2	.10	.12	.15	.20	.22	.25	.27	.29
3	.15	.19	.23	.30	.34	.37	.41	.44
4	.21	.25	.30	.40	.45	.50	.55	.59
5	.26	.32	.38	.50	.56	.62	.68	.74
6	.31	.38	.46	.60	.68	.75	.82	.89
7	.36	.45	.53	.70	.79	.87	.96	1.04
8	.42	.51	.61	.80	.90	1.00	1.10	1.19
9	.47	.58	.69	.91	1.02	1.12	1.23	1.34
10	.52	.64	.76	1.01	1.13	1.25	1.37	1.49
20	1.05	1.29	1.53	2.02	2.26	2.51	2.75	2.99
30	1.57	1.94	2.30	3.03	3.40	3.76	4.12	4.49
40	2.10	2.59	3.07	4.04	4.53	5.02	5.50	5.99
50	2.63	3.23	3.84	5.06	5.66	6.27	6.88	7.48
60	3.15	3.88	4.61	6.07	6.80	7.53	8.25	8.98
70	3.68	4.53	5.38	7.08	7.93	8.78	9.63	10.48
80	4.21	5.18	6.15	8.09	9.06	10.04	11.01	11.98
90	4.73	5.83	6.92	9.10	10.20	11.29	12.38	13.48
100	5.26	6.47	7.69	10.12	11.33	12.55	13.76	14.97
200	10.52	12.95	15.38	20.24	22.67	25.10	27.53	29.95
300	15.78	19.43	23.07	30.36	34.00	37.65	41.29	44.93
400	21.05	25.91	30.76	40.48	45.34	50.20	55.06	59.91
500	26.31	32.38	38.46	50.60	56.68	62.75	68.82	74.89
600	31.57	38.86	46.15	60.72	68.01	75.30	82.59	89.87
700	36.84	45.34	53.84	70.85	79.35	87.85	96.35	104.85
800	42.10	51.82	61.53	80.97	90.68	100.40	110.12	119.83
900	47.36	58.30	69.23	91.09	102.02	112.95	123.88	134.81
1000	52.63	64.77	76.92	101.21	113.36	125.50	137.65	149.79
2000	105.26	129.55	153.84	202.43	226.72	251.01	275.30	299.59
2500	131.57	161.93	192.30	253.03	283.40	313.76	344.12	374.48

Example: $1,249 is to be financed under Federal Housing Administration Plan for 24 months.

The fee for $1,000. is $101.21 for 24 months
" " " 200. " 20.24 " " "
" " " 40. " 4.04 " " "
" " " 9. " .91 " " "

The fee for $1,249. is $126.40 for 24 months.

By adding the fee of $126.40 to the amount of $1,249. financed you get $1,375.40 the amount of the Note. The total finance fee for any amount to be financed is simply arrived at by adding together the fees in the column for the number of months the Note is to run appearing opposite the amounts which added together equal the amount to be financed. In figuring finance fees, disregard odd cents of the amount to be financed.

Fig. 2—The new FHA rate sheet shows at a glance the exact finance charges on any given amount for any length of time

Steps in handling a transaction are quite as simple as heretofore, namely: first the contractor-dealer figures the cash selling price of the installation which we will say is $1,249.00; he then refers to the Rate Chart, Fig. 2, on the back side of application blank, Fig. 1. We will say the transaction is sold on a 24 months basis; the contractor-dealer will first figure $1,000 of the amount financed, which, on 24 month terms make a fee of $101.21; next he refers to $200 for 24 months and determines a fee of $20.24; then he refers to $40.00 for 24 months and gets $4.04; and lastly $9.00 which is the remaining balance and for 24 months gets a fee of $.91 —the total of which fees is $126.40.

He then takes the cash selling price of $1,249.00, adds the total fee of $126.40 which gives the amount of $1,375.40 as the deferred balance or amount of the note. He should then divide this by 24 months, and quote a price to the owner at the rate of $57.31 monthly for 24 months.

He should then have the owner fill out the Property Owner's Credit Statement, Fig. 1, which should be signed by both husband and wife, in the case of married persons, and completely filled in. The Property Owner's Credit Statement, should be forwarded to the office of the company, whose products he may be using, for credit approval. When credit approval is received the contractor-dealer should proceed to make installation. As soon as installation is completed, a note and a certificate of completion should be filled out. The note is endorsed by the contractor-dealer on the reverse side and forwarded with the certificate of completion to the office of the manufacturer handling materials, or through the wholesaler, as may be the case and which in turn will be forwarded to the lending agency who will issue check for the cash selling price of the installation to the last endorser on the note. If it should be a wholesaler who receives the check, they will in turn deduct the amount representing materials purchased by the contractor-dealer and then pay trade the balance. If note is received direct from the contractor-dealer, the entire amount of the cash selling price will be forwarded to the contractor-dealer. In the States of Pennsylvania, Maryland, Ohio, Wisconsin, Illinois, Colorado and Delaware, a judgment note will be used as the note form.

The lending agency after purchase of the note will proceed to effect collection by forwarding a coupon book to the purchaser in the usual manner. The contractor, however, has received his money and has no contingent or direct liability on the transaction.

The Property Owner's Credit Statement, Fig. 1, has approximately 33⅓ per cent less entries on it than the regular FHA form. This will avoid a great deal of sales resistance and was a courtesy extended by the Federal Housing Administration to facilitate more prompt handling of transactions wherein the finance medium uses proper diligence in the selection of applicants.

A New Prize Contest

NEWS NEWS NEWS

designed to assist every individual in our industry to capitalize upon the NEW FHA

A NEW FHA has just been created. Leaders hail it as today's greatest business building opportunity for the plumbing and heating industry. Quickly, there will be developed keen competition for the dollars generated by FHA. Plumbing and heating contractor-dealers will find their sales efforts matched by the best efforts of other industries. Speed in getting under way will determine largely ultimate success.

A new FHA campaign; a prize contest; a motor truck first award; sales helps; financing assistance; a success background in the first FHA; an industry already in motion; these are just some of the reasons all branches and members of our industry have an unusual opportunity to capitalize on the new FHA.

Contractor-dealers, wholesalers and manufacturers, all will find a part to play and tangible benefits in DOMESTIC ENGINEERING'S new FHA prize contest. For further details, see the April issue.

Govt. Survey–

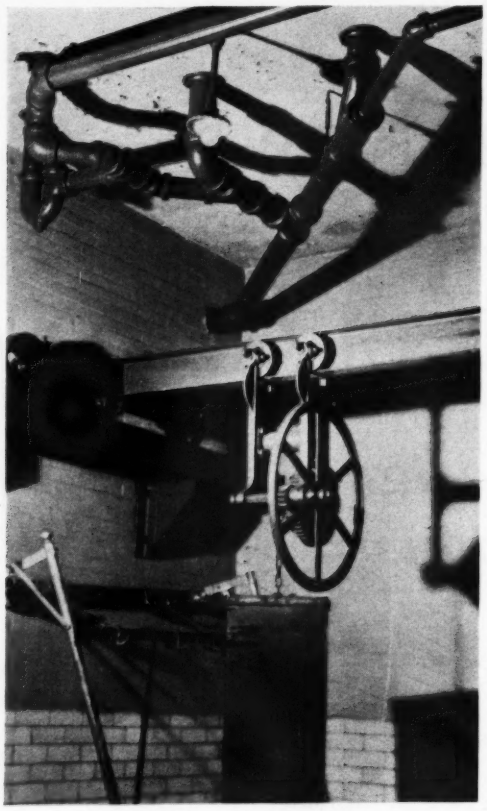


Fig. 1—Leakage from the pipes located on the ceiling might contaminate the water in the can suspended below the piping

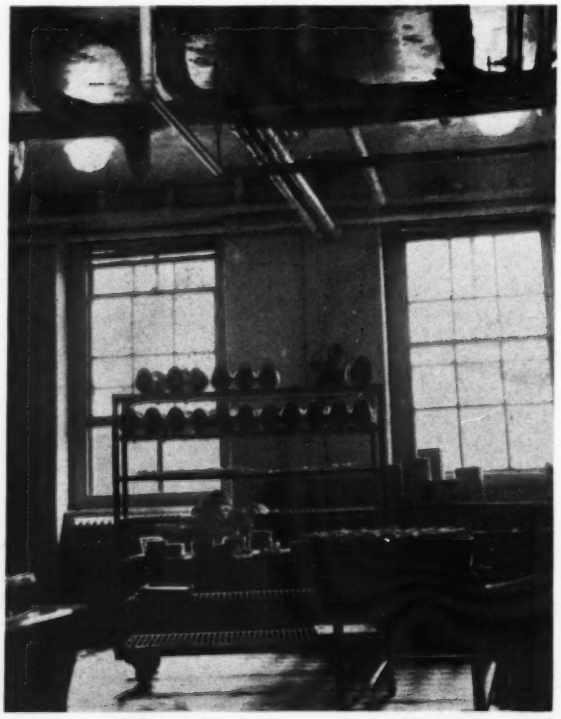
THE recently released report of health hazards in plumbing installations in Federal buildings in New York City and Detroit, Mich., reveals facts sure to be astonishing to the general public and illuminating to our industry. The net result of study, properly followed up, should be beneficial to all.

The report disapproved 14,844 installations in New York City—67.7 per cent of those inspected—and 2,736 in Detroit—75 per cent. A fixture installation was disapproved if it offered any possibility of polluting the water supply, if it was or could become a hazard to health.

Later in this article will be found a special news release which contractor-dealers may send to their local newspapers to give the facts in the report the widest possible publication. Sanitation leaders believe the conditions found in the buildings surveyed probably are typical of conditions in other public buildings. Thus there is a large public interest involved, and the people should be told the facts.

There is little reason to believe, futher, that hazardous installations are limited to public buildings. The public should be told that such unsafe conditions probably exist,

Fig. 2—Here is a possible source of food contamination. Leakage from the soil pipes might drop on the food trays below



leaders point out. The new FHA makes possible now the replacement of unsafe fixtures in private buildings and homes.

An estimate of the significance of the survey was made for DOMESTIC ENGINEERING by Major Joel I. Connolly, Chicago health department, who—as consultant-in-charge—laid down the plans along which the study was made. He says:

"The report 'Public Health Hazards in Plumbing—A Summary of the Inspection of Plumbing in Federal Buildings in New York City, N. Y., and Detroit, Mich.,' recently made public by the United States Public Health Service, is an outstanding contribution to clear-cut thinking on the closely allied subjects of plumbing and public health. Without hesitation, the bad plumbing conditions, which menace alike the health of federal employees and that of the public which uses the buildings, is exposed to the cleansing light of publicity.

UNSAFE INSTALLATIONS

"If the statistics on the unsafe installations in New York and Detroit will but shock the public into an insistent demand that its health be protected, without delay, in its own public buildings, then the warning can not go unheeded. If the examples of bad plumbing, positively dangerous to health and life, which are repeatedly cited in the report, are carefully studied by the plumbing industry and by the public health, medical and sanitary engineering professions, every one will be forced to recognize that similar hazards exist in many other buildings and in many other cities and states.

"No one is likely to question the fairness and accuracy of the report. It is quite clear that it was written

Reveals Dangerous Installations . . .

Disapproves 70 per cent of plumbing for health hazards. Condition of fixtures suggests dealer tie-in with revised F H A

with no bias and no prejudice—just a calm, dispassionate statement of facts. Sincerity and rigid adherence to the truth characterize its pages from beginning to end. No attempt is made in the report to dictate how the unhealthful plumbing conditions reported should be corrected. That is left to the skill and ingenuity of those most directly concerned—the manufacturer, plumber, engineer, architect, administrator, each an expert in his respective field.

"Because of the impartial, fact-finding and truth-stating atmosphere about the report, it carries a punch. It drives home a deep-seated conviction that something must be done to safeguard public health and done at once.

"In my judgment, this report deserves the most careful study, prepared and vouched for, as it is, by the United States Public Health Service, which every one knows is the foremost leader in many aspects of health work today under its distinguished Surgeon General, Dr. Thomas Parren. To make possible the much needed study the report deserves, it should be given, in its entirety, the widest possible publication, not only in this country but throughout the world."

EXCERPTS FROM REPORT

Following are excerpts from the report itself:

"In the course of this survey, a number of plumbing defects were found that merited further consideration than would be afforded by a simple tabulation. Some of them were important because they presented a more hazardous aspect than the general class of disapproved fixtures; others, because they represented an entirely new type of plumbing defect or deficiency hitherto seldom mentioned in any plumbing survey reports. These were given special attention and some of them are discussed in this summary.

"One distinctly dangerous installation is shown in Fig. 3. A 1 in. water line (marked W) was connected into a 2 in. soil pipe (marked S). The soil pipe ran from the point shown into a tidal bay below normal water level. The water line was connected to the sewer line in order to flush out that pipe whenever stoppages occurred. As can be seen in Fig. 3, the soil pipe, to the right of the trap, turns upward and connects to the various fixtures in the building. In the event of a stoppage in the horizontal stretch of this soil pipe, sewage may back up in the vertical leg and exert an increasing pressure on the valve separating the water and sewer systems. If this valve is opened to flush out the soil pipe, or if it is closed but leaking, and the pressure on the soil line side of the valve becomes greater than that on the water line side, then sewage will flow into the water line of the building. A vacuum in the water line also would produce a similar result.

TYPES OF DEFECTS

"Another type of defect which may be easily overlooked or dismissed as unimportant involves soil or waste pipes on the ceilings of ice manufacturing plants, above food preparation tables or over open drinking water

Fig. 3—With adverse pressure conditions, the water pipe "W" could be contaminated by soil pipe "S" to which it is connected

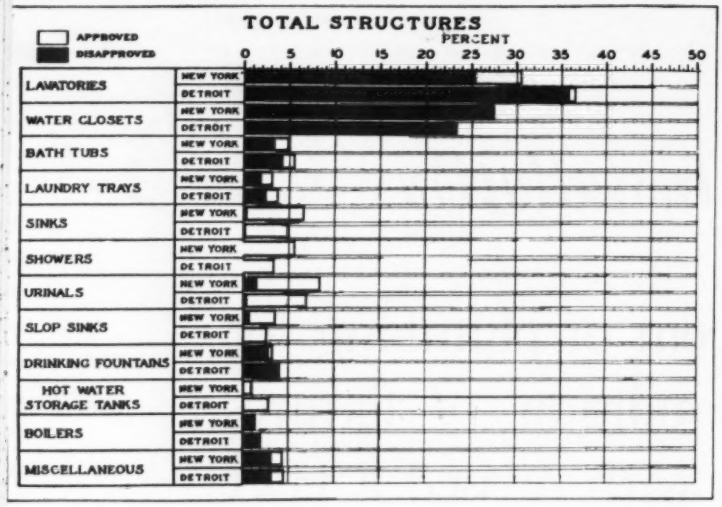


Fig. 4—In the above bar graph the percentage of approved and disapproved fixtures in all the structures inspected is shown. Note that the percentages apply to the total number of plumbing installations of all types inspected in total structures

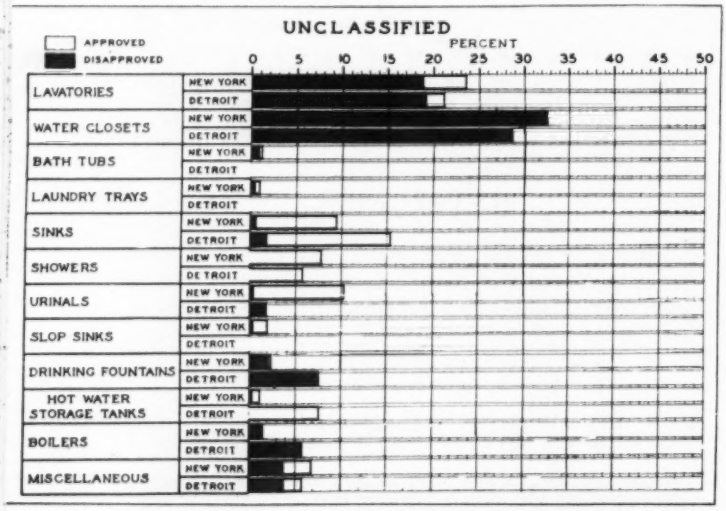
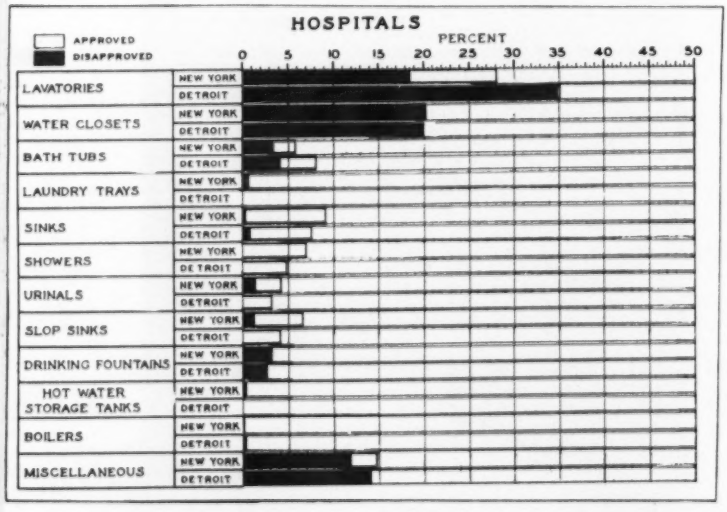


Fig. 5—Above is a graph for the unclassified structures and the same general remarks that apply to the other graphs also apply here. The approved and disapproved plumbing fixtures for hospitals is illustrated in Fig. 6 which is shown below



tanks. Fig. 2 shows several soil pipes located on the ceiling of an ice plant. The tank on the hoist in the center of the photograph is one of a number of such cans which are filled with water and placed in a brine tank in the floor of the room. During the freezing process some of these cans are located under the soil pipes shown in Fig. 1, and if any leakage of the soil pipes should take place, it would drop into the cans and be frozen into the ice.

"Fig. 2 shows several soil pipes above food preparation equipment in a kitchen. Leakage from these soil pipes may drop upon the food on these tables.

GRAPHIC COMPARISONS

"A graphic comparison, Figs. 4 to 9, of the results of the work in the two cities has been made for the purpose of furnishing a check on one of the original premises, namely, that the findings of this survey would be representative of the conditions in Federal buildings in general. In plotting the results, the figures have been expressed as percentages of the total fixtures inspected for each type of building for New York City and Detroit respectively. This has been done not only for each type of building but for all buildings as a whole. The percentages for New York City and Detroit are plotted against each other for each classification of fixtures.

"It will be noticed from the graphs that the segregation of the buildings on the basis of use, Figs. 5 to 9, show in most cases a closer correlation than resulted from the plotting of the total results for each city, Fig. 4. This was to be expected because while the plumbing within certain classes of buildings may vary with the location, size of city, and several other factors, in other classes of buildings, such as small residences, it may be expected to be comparatively similar throughout the United States.

"In any survey of plumbing defects—before an appreciation of the results can be had—it is necessary to understand fully the conditions under which a plumbing fixture or installation may become a public health hazard. First, the design of the fixture or installation must be such that it furnishes a direct or indirect path for the spread of contamination. Second, the occurrence of conditions which would permit contamination must be possible.

The paths through which contamination may be spread through a plumbing fixture or installation can be determined. In some fixtures, a direct and unobstructed course is presented. In others, the path is indirect and blocked by valves, siphon preventors, and sometimes air gaps. In this survey to determine the prevalence of plumbing defects in public buildings no cognizance was taken of the fact that the conditions necessary for the spread of contamination varied in the different buildings inspected; the presence of a definite path by which contamination possibly could be spread was the sole basis for approval or disapproval of the fixtures and plumbing installations.

"In a study of several of the buildings inspected in New York, subsequent to the completion of the survey, circumstances conducive to the spread of contamination, generally reduced water pressure or creation of partial vacuum in water lines, were examined for the purpose of comparing their frequency of occurrence. In one

building constructed recently, those factors necessary for the development of a disapproved fixture into a potential health hazard were almost non-existent. Thus, while several of the fixtures in this building were listed as disapproved, the degree of hazard to health in their use was exceedingly small.

In one of the other buildings which was studied, conditions potentially contributory to the spread of contamination were observed to occur quite frequently. While about the same percentage of fixtures were listed as disapproved, in the older building as in the newer building, the health hazard surrounding their use was many times greater. It is evident, therefore, that fixtures which might be permitted in one building, if allowed to exist in another building, where different physical forces come into play, might contribute measurably to the health hazard in the latter building.

"That cross connections and defective plumbing fixtures or installations exist in Federal buildings can not be denied. Some defects were of immediate danger to the health of the water users in the buildings in which they were located; others were of remote significance unless other variables were brought into play. As defects were found in the New York buildings in about the same numbers as in Detroit buildings, it can be concluded that the same conditions exist in federal buildings in all other cities. Also, it seems reasonable to conclude that similar conditions could be found in other public buildings generally."

SPECIAL NEWS RELEASE

Following is a special news release which contractor-dealers will find useful as a means of stimulating public interest in sanitation and health.

A new Federal survey which revealed that 75 per cent of the plumbing in Government buildings in New York City, and 67.7 per cent of the fixtures in Detroit are hazardous to health, was explained today by ————— ————, plumbing and heating contractor-dealer of ..... St. Nearly 24,000 plumbing fixtures were examined, he said.

"There is no reason to believe that the plumbing in these buildings is any more hazardous than in other buildings throughout the country," said Mr. ————. "The public health is being endangered every day, and public officials should at once take steps to remedy dangerous conditions caused by old and outmoded fixtures and overloaded plumbing.

Mr. ————— explained that the study, made by the U. S. Public Health Service in cooperation with the WPA was undertaken as a result of the amebic dysentery epidemic in Chicago at the time of A Century of Progress. That outbreak was traced directly to faulty plumbing, he declared.

"Of course, faulty plumbing is not limited to public buildings," he said. "Cross connections and back siphonage (causes of the pollution of the water supply) may be present in private residences as well."

Mr. ————— pointed to the modernization provisions of the revised Federal Housing Act as providing means for persons to finance needed remodeling in their homes. Money borrowed under the FHA can be used to replace outmoded or dangerous plumbing fixtures, he said.

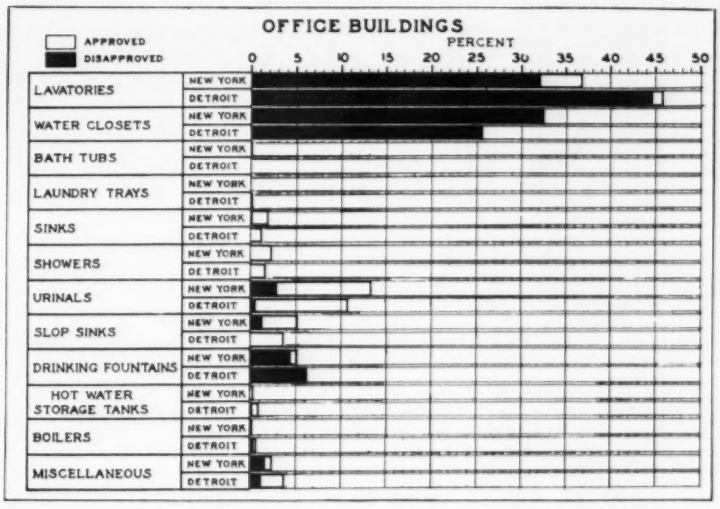


Fig. 7—Approved and disapproved plumbing for office buildings is indicated above. Fig. 8—below is a similar chart which is for dormitories, multiple apartments and barracks. All of these charts show disapproved plumbing as a possible hazard

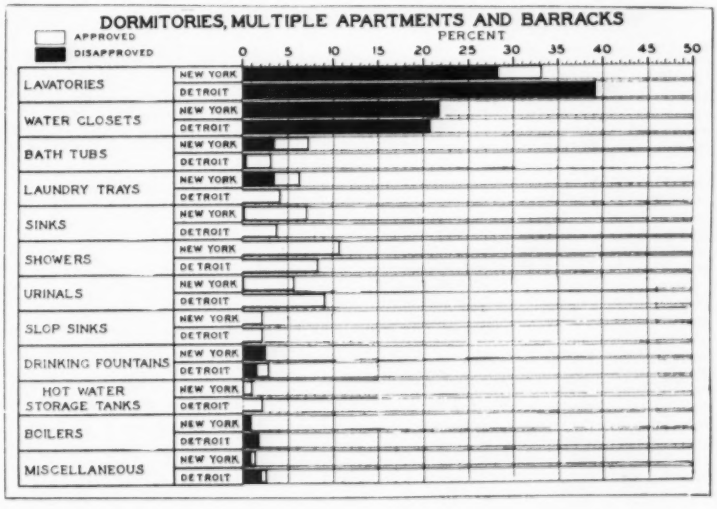
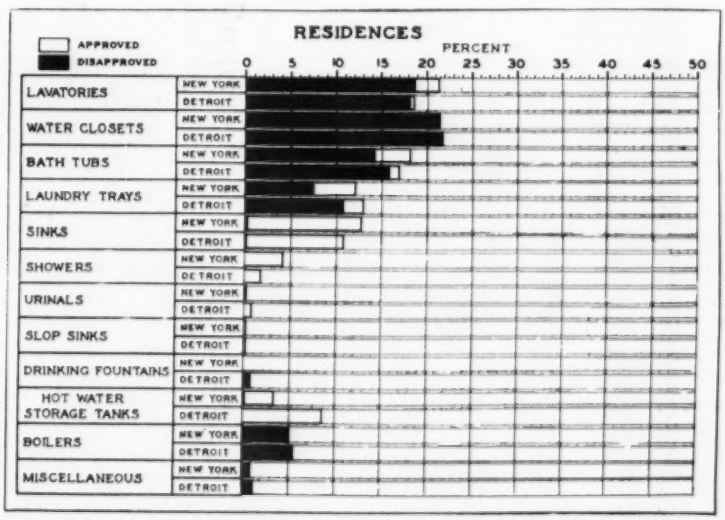


Fig. 9—Below is a chart indicating the percentage of approved and disapproved types of plumbing installations for governmental residences. The material presented in these charts was gathered from a survey in Detroit, Mich., and New York City



Selling—*The Industrial Market* . . .

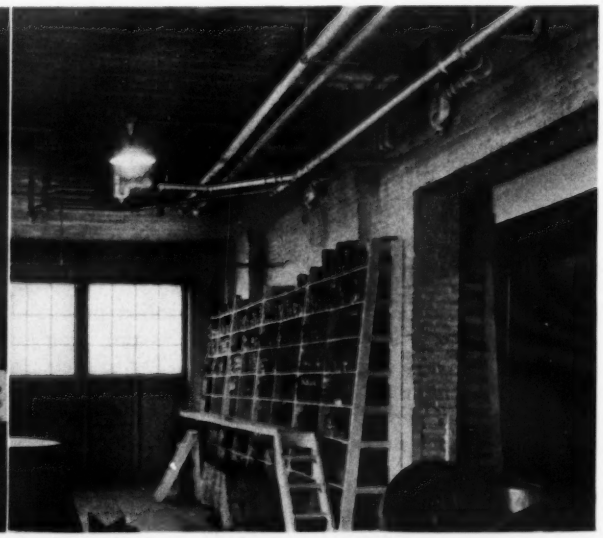
Plant owners have found that modernization pays good dividends in employe satisfaction. All that is required is the final "sales push"

MANY INDUSTRIAL ORGANIZATIONS are taking one step towards the solution of labor problems by providing modern facilities and improved working conditions for their employes. This is a general trend and has been proved sound by the experience of leading industrialists the country over. Merchandising-minded plumbing and heating contractors have been quick to see that this policy of forestalling employe complaints opens a new and important market for remodeling and modernization programs.

LITTLE JOB LEADS TO BIG ONE

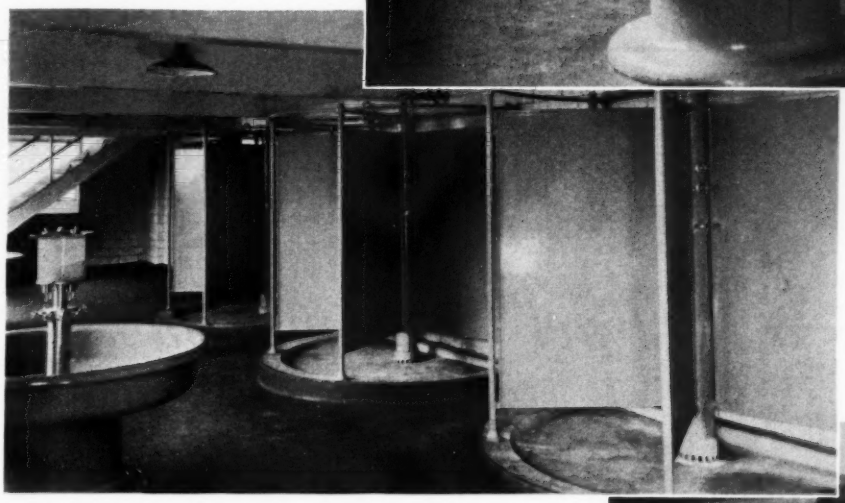
The pictures on this page and the succeeding page show the type of modernization that many manufacturers are already half sold on and which require only the final push of "now is the time" to secure a contract. This particular installation, made by Charles Alcock of the Alcock Plumbing Co., Chicago, grew out of a smaller contract for the installation of some downspouts and water drainage. While that job was in progress, Mr. Alcock examined the washroom facilities in use at that time and found them out-moded and ill-suited to preserve that employe satisfaction which is the manufacturer's most valuable asset today. Mr. Alcock called the company's attention to the unsatisfactory condition of their washroom equipment and showed them what might be done in the way of modernization. He got the contract for remodeling and everyone concerned benefited from his sales efforts. The employes are pleased, not only at having finer and more sanitary washroom facilities, but also with the company's attitude towards their needs; the company is pleased because of the favorable employe reaction; Mr. Alcock is pleased at having completed a profitable contract and a good job; and doubtless the manufacturers of the equipment used also found cause for satisfaction as a result of the remodeling program.

The new washroom was installed in a Chicago foundry and provides adequate facilities for 250 men. The walls are of light gray tile; the floor is of watertight composition material provided with drains to allow washing the entire room down daily. The installation includes six round wash stands finished in gray enamel, each of which will accommodate eight to ten men. They are equipped with powdered soap dispensers and thermo-



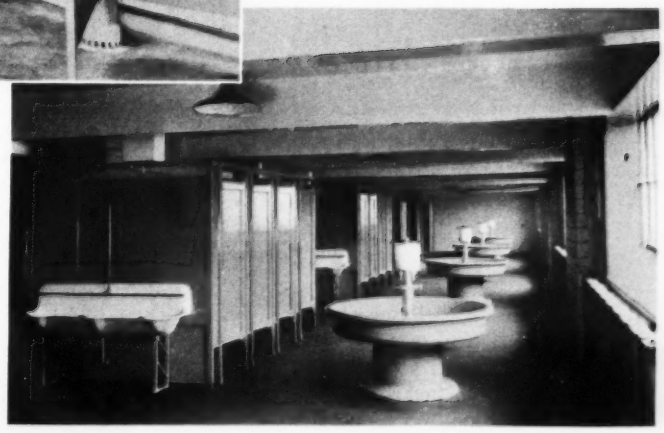
Lavatories

At the right is a general view of the remodeling installation described in this article. Each lavatory accommodates eight to ten men without crowding and the entire layout is designed for 250 men



Showers

Shown at the left is one of the two shower batteries installed by Mr. Alcock. A total of eighteen shower stalls are provided with individual thermostatic and mixing controls



On the opposite page are two pictures of the piping involved in this modernization job. The layout was designed to meet the peak loads always encountered in such industrial installations especially at the noon and evening closing hours

Piping Layout

static mixing valves to give constant temperature water. Other washroom facilities include six shower stalls each with three compartments. Each of these compartments has its own control and mixing valves.

The toilet equipment includes eight closet compartments finished in gray to match the showers and four 5 ft., acid-resisting urinals with automatic urinal tanks. The layout of the installation was carefully planned to avoid crowding and interference during rush hours and the plumbing was also designed to accommodate the peak loads encountered in such industrial installations.

Thousands of such half-made sales all over the country are awaiting the closing efforts of some sales-minded contractor. Every employe in a plant with out-of-date plumbing equipment is an active ally of the plumbing contractor in selling modern equipment and a modern installation to his firm.

It should be remembered also that the FHA Act of 1938 insures loans up to $10,000 for the purpose of remodeling. The availability of funds for remodeling under this Act will provide an added impetus to industrial modernization and a continuation of the personnel policy here pointed out.

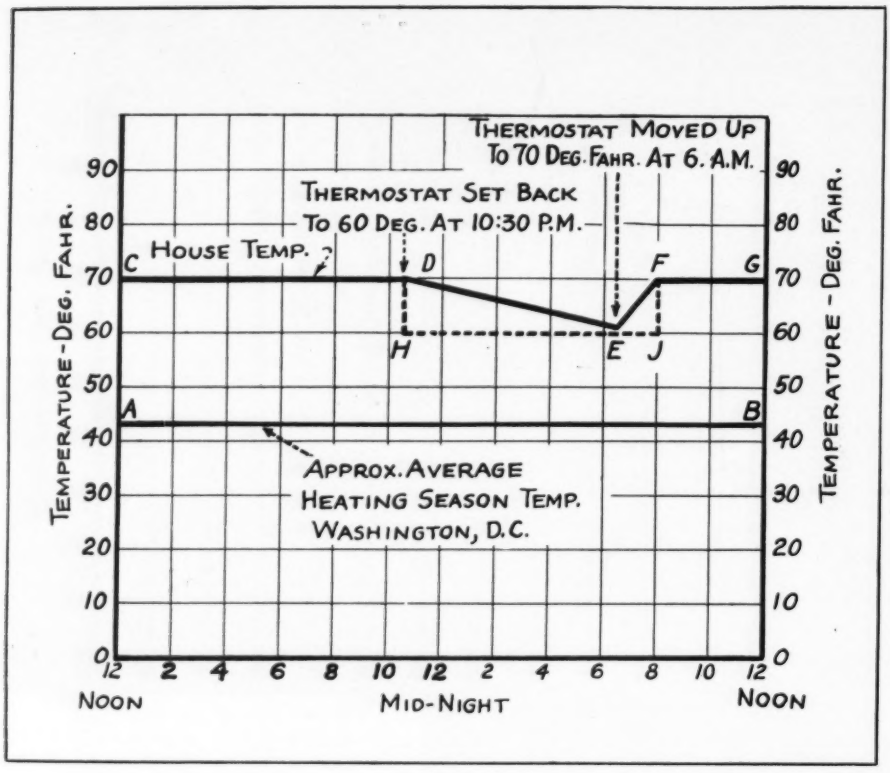


Fig. 1—This temperature graph has been drawn for an average day in the vicinity of the District of Columbia where the average outside heating temperature is 43 deg. Fahr. The horizontal coordinate is the time of day and the vertical coordinate is the temperature, both on the outside and the inside

Savings — *In Fuel Consumption . . .*

Reduced night temperature by means of thermostatic control is discussed here

THE effects of the degree of the room temperature on fuel consumption, with particular reference to the effect of reduced night temperatures, is considered to be a subject where there is a lack of appreciation as to the actual fuel saving by the reduction of night temperatures and where there is not a full knowledge of the physical facts involved. It is the purpose of this article to indicate that any reduction in the room temperature, by themostatic control, usually results in a proportionate reduction in total fuel consumed. In many installations appreciable savings can be effected by reduction of night temperatures. For example, this is demonstrated by the fact that there is a saving in fuel resulting from the carrying of lower inside temperatures for considerable periods, as no one would deny that it is cheaper to heat a given house to 65 deg. Fahr. rather than to 75 deg. Fahr. during an entire heating season, or even for a month.

It would be well to consider in some detail the physical effect of variation in maintained temperatures on fuel consumption. For a given system or house the fuel consumption per degree-day is a fixed quantity; that is, a definite amount of fuel is required for each degree-day maintained. Similarly the amount of fuel required per day is equal to the product of this constant multiplied by the average difference in temperature between the inside and outside. Put in terms of actual figures, in accordance with the volume, *Oil Burner Heating,* page 30, an average installation which has been based on 70 deg. Fahr. inside and 0 deg. Fahr. outside temperature and consisting of 550 sq. ft. of standing steam radiation, required 600 gallons of oil per 1000 degree-days, or 0.6 gallons per degree-day or .0011 gallon per degree day per sq. ft. of standing steam radiation. Remember that this means that .0011 gallon of oil is required per day for each sq. ft. of installed

standing steam radiation to maintain an average difference of 1 degree in temperature, inside and outside.

Thus, if an average temperature of 70 deg. Fahr. is maintained, night and day, when there is no night time set back of the thermostat and the average outside heating season temperature is 43 deg. Fahr., as it is in the vicinity of Washington, D. C., the average number of degree-days for each 24 hours would be 1 × (70 deg. Fahr. minus 43 deg. Fahr.) or 27. However, if the average temperature during the 24 hour period was 65 deg. Fahr.; that is, 70 deg. Fahr. during the day and some lowered night temperature, resulting in an average of 65 deg. Fahr., the number of degree-days would be 1 × (65 deg. Fahr. minus 43 deg. Fahr.) or 22.

In the first case, the fuel consumption would be 0.0011 × 27 or 0.03 gal. per sq. ft. and in the second case the consumption would be 0.0011 × 22 or 0.024 gal. per sq. ft. of standing steam radiation per average day, assuming the structure is properly radiated. Expressed in symbolic form:

F equals D × Td × Q × R
In which D is the number of days in the heating season.
Td is the average difference in temperature maintained between the inside and outside.
Q is the amount of fuel required per sq. ft. of installed radiation per degree-day.
R is the amount of radiation installed.
F is the total amount of fuel required per season.

Now, for a given installation, three of these items are fixed or constant. The number of days in the heating season is constant (in the vicinity of Washington, D. C. about 210 days). Q, the amount of fuel required per sq. ft. of installed radiation, is constant for a given job (again refer to *Oil Burner Heating*), and finally, the amount of radiation is necessarily constant in an assumed job. Thus we can say that the amount of fuel required per season is proportional to the average difference in temperature between the inside and outside, since this is the only variable appearing in the above equation. Now any reduction in night temperature must result therefore in a reduced average difference in temperature between inside and outside and must therefore result in a reduction in the fuel consumption. Refuting the fact that objects within the house drop to the lower temperature and require additional pickup is the fact that the amount of heat required to bring the temperature of these many objects up is precisely equal to the amount which those objects gave off to the house during the process of cooling down. Suppose for example, that a piece of furniture drops from a temperature of 70 deg. Fahr. to 60 deg. Fahr. during the night; in doing so it gives the heat, which it loses, directly to the house and thus diminishes the amount of heat energy which is demanded from the heating system. Conversely in the morning when the temperature of the rooms and the objects in the house is being raised the amount of heat required to raise the temperature of the furniture object is equal to the amount which that object gave off the previous night, thus cancelling out the effect and bringing the relationship between fuel consumption and temperature to that given in the above equation. For the purpose of discussion a hypothetical temperature graph has been presented in Fig. 1, for an "average" day in the District of Columbia, where the average outside heat-

(Continued on Page 120)

Commenting on this article, G. B. Benton, Minneapolis-Honeywell Regulator Co., said, in part:

"We have carefully checked over Mr. Senner's article and believe that it gives a very straight-forward explanation of the lowered night temperature effect upon fuel saving, and if possible we should like to have about twenty-five reprints of the article as it will appear in your magazine."

Excerpts contained in a letter received from R. L. Campbell, Detroit Lubricator Co.:

"We have read the article carefully and believe the material is reasonably presented.

"We, of course, have been and are interested in this general subject and it is our policy, based on field experience, to make no effort to prove or disprove the opinions of any individual engineer on this question whether or not a saving is effected by reduction in night temperature. This opinion is not based on any desire to 'ride the fence' but is based on our own belief that so many factors are involved in this determination that almost every type of installation must be taken on its own merits. This belief is backed up by some twelve years of experience, during which time we have found many cases where a saving has been effected by a reduction in night temperature and many cases where no saving has been effected, and in a few instances an actual increase in fuel cost.

"Unfortunately, we cannot verify these experiences with conclusive test data. This question has been checked with reasonable accuracy in residences in which the writer has lived. In one case—a one pipe steam system—the major saving was effected by turning the thermostat off entirely and letting the temperature drop at will during the night. In another case—also a one pipe steam job—the major saving was effected by a night turn down of approximately 5 degrees. In another case—a warm water system—there was no saving apparent with any degree of turn down. In another case—a gravity warm air furnace hand fired—the benefit of night was apparent only in the ability to carry the fire during the night in severe weather. In this same case stoker fired there was no apparent saving by night turn down.

"It is the writer's belief that on the average especially for steam, and warm air installations, the main advantage of night turn down is not one of fuel saving but one of having the heating system in full operation slightly before and during the period of arising in the morning. You can gather from the foregoing that this subject is one on which we do not agree to take sides for argument."

This hot water window display suggests the health benefits of an adequate and reliable supply of hot water for bathing use

Water Heating—*Cooperation* . .

New recommendations replace agreement of 1931. San Francisco holds water heater sales meeting. Chicago plan carries on

EVENTS of the past few weeks dramatize the contractor-dealer's campaign for water heater sales, increase and emphasize the profit-possibilities in this kind of business nationally.

In San Francisco a meeting of 250 master plumbers, representatives of manufacturers and public utility executives laid plans for increasing an already thriving water heater business. Speakers pointed out that master plumbers sell 70 per cent of the heaters marketed in California.

In Chicago, the campaign entered a second phase, with emphasis on strong merchandising aids in the forms of advertising, direct-mail, car-placards and window displays. (DOMESTIC ENGINEERING, February, 1938).

TYPE OF MERCHANDISING

This kind of merchandising has proved essential everywhere and always, for water heaters can only be sold through salesmanship. But there is another essential underlying the success of both groups. That essential is cooperation between the master plumbers and the local utilities.

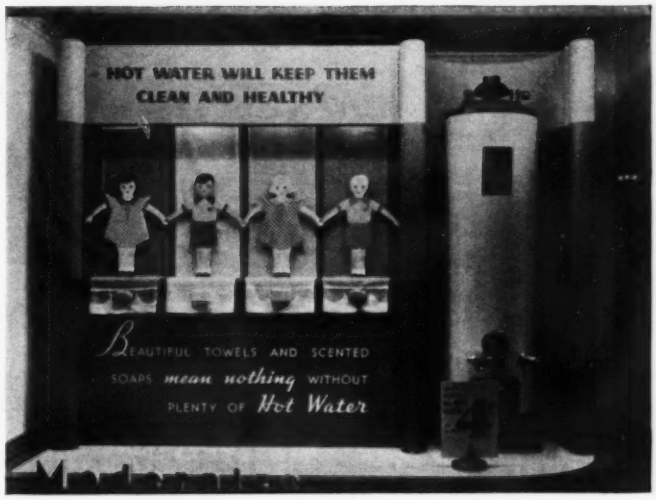
That being established fact, the third event to be reported gains added significance. That event is the adoption of a new set of recommendations for cooperation between local master plumbers' associations and public utilities. The recommendations were drawn up recently by a joint committee of the N. A. M. P. and the American Gas Assn.

These recommendations supplant a group of principles in operation since 1931. Where these earlier principles merely threw open the door to local cooperative agreements, the present plans call for the two national organizations to go actively into cities and states, and to try, by their influence, to induce local working agreements. The recommendations go farther—are more complete—than the principles of 1931, which are now considered outmoded by changed conditions.

The target aimed at is more profit to the contractor-dealer through water heater sales and more profit to the utilities, not through their selling heaters, but through load gained by additional heaters in service.

The recommendations follow:

"Whereas, the parties hereto recognize the need of gas utility companies to manufacture, produce and market gas in this United States and the master plumbers to market and install gas appliances, joining together in



This display suggests the value of hot water to families which include children. It keeps them clean and guards their health

a mutual understanding in order that fair and open competition in the respective fields of endeavor of the parties hereto be maintained; and the sale of gas and gas appliances in said United States to the consuming public be facilitated, and efficiency and vigilance be maintained in properly safeguarding the public health in connection with the installation and use of gas appliances and the consumption of gas,

"Now, therefore, the parties hereto recommend as follows:

"The American Gas Assn. recognize the National Assn. of Master Plumbers and its constituent members as consumer dealers for all gas-fired appliances bearing A. G. A. approval.

"The National Assn. of Master Plumbers and its constituent members agree to distribute only gas-fired products as approved by the American Gas Assn.

"The joint committee of the A. G. A. and the N. A. M. P. agree that the utilities should not compete unfairly with master plumbers in selling gas appliances to ultimate consumers.

"(1) It is furthermore strongly urged that the matter of prices, installation cost, discounts and financing terms be worked out by local arrangement between the utility and the master plumbers in each local area.

"(2) It is further recommended that where installation specifications for gas-fired equipment are not laid down by special ordinances, that the utility make up standard specifications (including inspection) to be utilized by the dealers and that all installation of piping and equipment beyond the gas meter be performed by master plumbers in accordance with the above mentioned specifications.

"(3) It is further recommended that the manufacturers of gas-fired equipment review their price schedules to plumbers and utilities and sit in with the various local groups and assist in working out practical working methods for the distribution of this equipment.

"(4) It is further recommended that a written understanding should be reached between each utility and the master plumbers' committee in the local area. This agreement should set forth the mutual understandings, the details of the cooperative arrangements, the compensation to be secured for specific services, the degree of cooperation requisite in the sponsoring of ordinances, laws and regulations, and the specific period during which the agreement is to be operated.

"(5) It is further recommended that definite cooperative committees should be organized representing the utility and the local master plumbers in each area in the interest of the proper development of the gas appliances and gas utility business in each area.

"(6) It is further recommended that all utility advertising carry either a symbol or slogan which will build up the confidence of the public in the cooperating master plumber dealers.

It is emphasized that the above recommendations are principles, not details; the committee pointed out that no details can be developed on a national basis which would take full cognizance of local or area conditions.

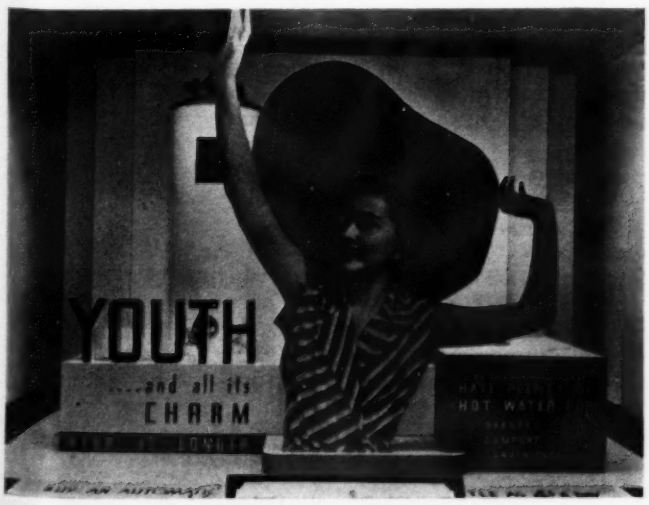
COOPERATION EXISTING

The next step, according to the N. A. M. P., is a survey to be conducted by the national's conference committee. It will try to discover the kind and degree of cooperation already existing between local master plumbers' organizations and the utilities in various areas. Where unsatisfactory cooperation exists, the A. G. A. will urge its members to discuss with the local associations. The N. A. M. P. also will use its influence with those local associations which have been reluctant to deal with the utilities. Thus would better relationships be obtained.

A permanent joint committee between the two national organizations is planned for formation after the survey is completed. The purpose would be to foster actively the individual cooperative arrangements, and to bring these agreements into as much uniformity as possible considering purely local conditions.

The N. A. M. P. committee which aided in drawing the recommendations was Herbert F. Weldin, chairman, and Henry O. Heiser, chairman of the conference

(Continued on Page 121)



At the left is another attractive window display which demonstrates the merchandising possibilities of this type of display

A New Corporation—

"Purposes of the new corporation plumbing materials and the accept- meet the performance standard

A NEW corporation has just been formed to carry out the testing program of the N. A. M. P. (DOMESTIC ENGINEERING, December, 1937). The introduction to a news release on this subject from the national headquarters follows:

"Pursuant to the action taken by the N. A. M. P. Board of Directors at a meeting held in Cleveland, November 1, 1937, and after conferences with interested parties, a California non-profit corporation, known as the Testing Laboratory Nationally Accepted by Master Plumbers, was incorporated on February 11, 1938. The purposes of the new corporation are to facilitate the testing of plumbing materials and for the acceptance of plumbing materials which meet the performance standards established by the testing agency.

"The new non-profit corporation was formed, primarily, for the purpose of separating entirely the testing and acceptance of plumbing materials from the normal activities of the National Assn. of Master Plumbers. While the national association will finance the new corporation, all activities of the new corporation will be carried on by a separate board of directors and under the guidance of a council, in which council members of the N. A. M. P. will be in a minority."

It is pointed out by the national association that "there will be no charge made by the new corporation for testing materials submitted to it, or purchased in the open market, nor will there by any charge for the issuance or use of the seal of acceptance for accepted materials."

The officers and directors of the new corporation are as follows: president—Thomas F. Hanley, Jr.; board of directors—Thomas F. Hanley, Jr., L. J. Kruse, H. Merwin Porter, George W. Frank and George H. Werner. At the first meeting of the original incorporators, Wm. J. Lang was appointed coordinator of testing, and Ernst L. Flentje secretary-treasurer.

The original incorporators at their first meeting, approved the by-laws, which follow, and instructed the officers to proceed with the formation of the council as prescribed in the by-laws. Letters to organizations inviting their participation in the council and in the affairs of the new corporation, have already been sent.

As soon as a sufficient number of acceptances have been secured from the organizations invited to participate, the council will proceed with the formulation of its rules and regulations with respect to the procedure for testing, and the dissemination of the results of tests, according to the N. A. M. P. release.

The testing equipment owned by the Plumbing Contractors' Assn. of Chicago has been loaned to the new corporation and is now being erected at the State University of Iowa, Iowa City, Iowa, which university has been tentatively selected as the testing agency for the new corporation.

The by-laws follow in full:

Article I—Name: this corporation shall be known as the "Testing Laboratory Nationally Accepted by Master Plumbers."

Article II—Seal: the corporate seal of this corporation shall have inscribed thereon the following: "Testing Laboratory Nationally Accepted by Master Plumbers, Incorporated February, 1938."

CORRELATION OF AGENCIES

Article III—Office, *Section 1:* The principal office of this corporation shall be in the City of Oakland, County of Alameda, State of California, or such other city as may be selected by the Board of Directors of this Corporation.

Article IV—Objects and Purposes, *Section 1:* This corporation is formed for the correlation of agencies concerned with the protection of public health through properly designed and installed plumbing and through preserving the purity of the potable water supply; for the development of performance standards for plumbing apparatus, appliances, materials, appurtenances and systems; for the testing of plumbing apparatus, appliances, materials, appurtenances and systems; for the development of methods of, and evaluation of methods of, assembly, construction, installation, maintenance and repair of, plumbing apparatus, appliances, materials, appurtenances and systems; for the issuance of such certificates of, or information on performance, acceptability, data and characteristics of, plumbing apparatus, appliances, materials, appurtenances and systems as may be desirable; for the acceptance of such materials, methods, devices, appurtenances and systems as may meet performance standards, developed or determined, on plumbing appa-

Founded by N. A. M. P. Directors . . .

are to facilitate the testing of ance of plumbing materials which established by the testing agency"

ratus, appliances, materials, appurtenances and systems; for establishing, supporting and maintaining fellowships or funds for graduate students majoring in subjects allied with plumbing in universities or other institutions of higher learning; for establishing, supporting and maintaining research and investigations in the field of plumbing, and for the dissemination of the results of such research and investigations.

ELECTIVE OFFICERS

Article V—Officers, *Section 1, Elective:* The elective officers of this corporation shall consist of the following:

(a) A board of directors of five members to be elected by ballot for a term of one year, or until their successors are elected, at the first annual meeting of this corporation. Upon expiration of their respective terms of office, the vacancies thus created are to be filled by election at the annual meeting.

(b) The president of this corporation, who shall be elected annually by the board of directors upon taking office from among their number to serve for one year or until the election and qualification of the succeeding board.

(c) The vice president of the corporation, who shall be elected annually by the board of directors upon taking office from among their number to serve for one year or until the election and qualification of the succeeding board.

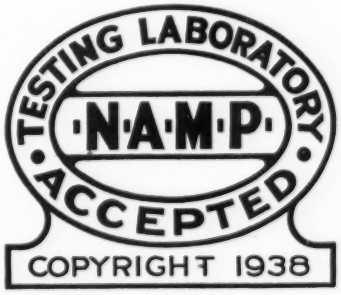
(d) Upon taking office the board of directors shall appoint a secretary-treasurer to serve at the pleasure of the board. The secretary-treasurer need not be a member of the board.

(e) The board of directors shall appoint a properly qualified person to serve during the pleasure of the board, to act as co-ordinator of testing without salary. Said co-ordinator shall receive applications for testing, shall pass upon same in accordance with procedural rules issued by the board of directors of the council, and shall refer products for tests to the testing agency. Upon completion of the test, the co-ordinator shall refer the test results to the members of the council for their action. The co-ordinator shall be the agent of the board of directors, and subject to the approval of the board, shall act as co-ordinator between the council and the testing agency; but shall have no vote in the acceptance of any tested article, nor vote with the board of directors.

Section 2. Appointments: The board of directors of this corporation may appoint, and at pleasure remove, such subordinate officers and agents as it may deem fit, and give them such titles, compensation, expenses, tenures of office and require them to perform such duties as it may designate.

Section 3. Vacancies: (a) In the case of death, resignation, disqualification or removal of the president of this corporation, the vice president shall forthwith and automatically succeed to the title and duties of that office, and the board of directors shall fill the vacancy in the office of the vice president until the next annual meeting.

(b) In the case of death, resignation, disqualification or removal of any member or members of the board



"This Corporate Seal of the 'Testing Laboratory Nationally Accepted by Master Plumbers' will be issued and may be used free of charge on all materials and equipment approved by the organization"

of directors of this corporation, or of any officer or officers of this corporation, other than the president, the remaining members of the board of directors of this corporation shall fill such vacancy or vacancies by appointment for the balance of the term of the one or ones so dying, resigning, becoming disqualified or being removed, until the next annual meeting of the corporation. If, in the opinion of the president, it shall be necessary to do so, the president may fill by appointment any such vacancy or vacancies temporarily pending a meeting of the board of directors.

Section 4. Removal: Any member of the board of directors of this corporation may be removed from office by a vote of four members of the board of directors, and for any cause that they may deem sufficient, and such removal from office shall automatically and immediately constitute the removal of such member of the board as a member of the corporation.

GENERAL SUPERVISION

Section 5. Powers and Duties of the Board of Directors: The board of directors of this corporation, except as may be hereinafter provided, shall have and exercise general supervision of, and control over, the affairs of this corporation with full authority to act for and to represent this corporation during the periods between meetings, and shall have and exercise all powers granted by, or permissible under, the articles of incorporation of this corporation and all articles amendatory thereof or supplemental thereto, and which a board of directors of a non-profit corporation may otherwise exercise under the law.

Section 6. Meetings of the Board of Directors: (a) The meetings of the board of directors shall be at the call of the president or any four members thereof, upon twenty days written and mailed notice.

(b) Four members of the board of directors, of which the president must be one, shall constitute a quorum at any meeting of the board of directors, provided, however, in the event of a vacancy in the board, a majority of the remaining members shall constitute a quorum.

Section 7. Duties of the President: The president shall have the general management of the affairs of this corporation. He shall preside at all meetings of the board of directors and the membership. He shall appoint all committees not otherwise provided for, and shall require all officers and committees to properly perform their duties. He shall perform such other duties as are generally required of a president. He shall be ex-officio a member of all standing committees. He shall be chairman of the board of directors.

Section 8. Duties of the Vice President: The vice president shall, in the event of resignation, death, disability or absence of the president, perform all of the duties required of the president.

Section 9. Duties of the Secretary-Treasurer: The secretary-treasurer shall receive and take charge of all money paid to, belonging to and accruing to this corporation, and he shall deposit all such money in a bank which shall have been approved by the board of directors of this corporation. The bank account shall be in the name of the corporation, and no money shall be withdrawn therefrom except by a check signed by the president and secretary-treasurer, unless otherwise provided by the board of directors. The secretary-treasurer, or his duly authorized representative, shall keep a complete record of all monies received and all disbursements made. His account books shall be open for the inspection of duly qualified officers or representatives of this corporation. He shall cause the minutes of all meetings of this corporation and its board of directors to be kept, and shall produce these minutes at each meeting or whenever otherwise instructed. The secretary-treasurer shall send notices of meetings respectively to committees, members and the board of directors where notice is required to be given. He shall perform all such other duties as are necessary for the proper conduct of his office. He shall have custody of the corporate seal. The secretary-treasurer shall have the direction of employes of this corporation when said employes act for, or in behalf of, the secretary-treasurer.

Article VI—Membership, Section 1: Membership in this corporation shall be confined to five active members.

Section 2. (a) Election or appointment to membership in the board of directors shall constitute acceptance into active membership.

(b) All property rights and interests in the corporation shall be vested equally in the active members.

Section 3. Termination of Membership: Four members of the board of directors of this corporation, with or without notice or hearing, may expel any member from this corporation if, in the opinion of the board of directors, such action shall be necessary and such expulsion shall automatically and immediately constitute the removal of the expelled member from the board of directors.

Section 4. Resignation: Any member may resign from membership and from the board of directors by submitting his resignation in writing to the board of directors.

TERMINATION OF MEMBERSHIP

Section 5. Ex-Members Claims: Upon the termination of membership in this corporation for any reason, such ex-member shall cease to have any claims or interest in, any monies or properties of this corporation. The monies and properties of this corporation shall remain free of all claims, right, title or interest whatsoever, by such ex-member.

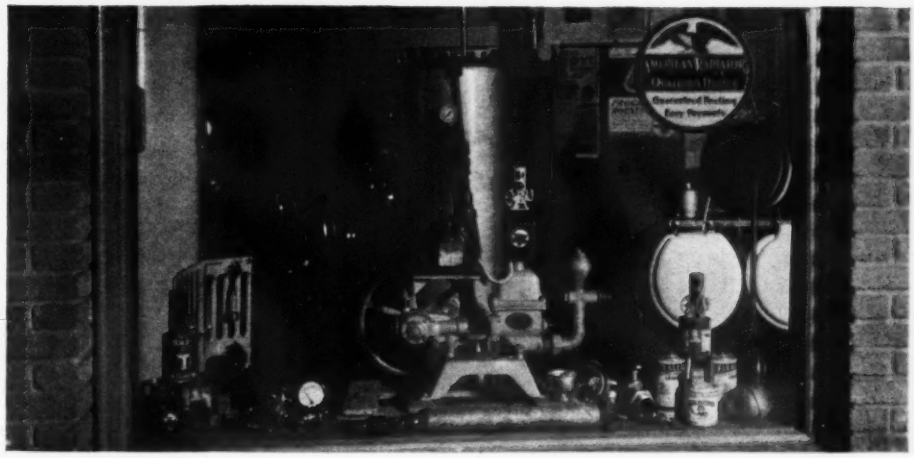
Article VII—Dues, etc., Section 1: The members shall pay no dues, fees and/or assessments into the treasury of the corporation.

Article VIII—Meetings, Section 1. Annual Meeting: The annual meeting of this corporation shall be in June of each year, provided, however, that such meeting date may be changed by the board of directors. The board of directors, by giving 30 days notice in writing to all active members, may appoint and/or change the place and/or time and date of the annual meeting.

Section 2. Special Meetings: Special meetings may be called by the president or the board of directors by giving ten days notice in writing to each member.

Section 3. Order of Business: The order of business at all annual and regular meetings of this corporation shall be as follows: 1. Call to order and roll call.

(Continued on Page 123)



Shown at the right is the show window of the Sanitary Plumbing Co. Mr. J. M. Folger, manager, has this to say about his pump business, "the pump owner file has been our 'bread and butter' mainstay for some years back"

Water Systems—*Sold by Service*

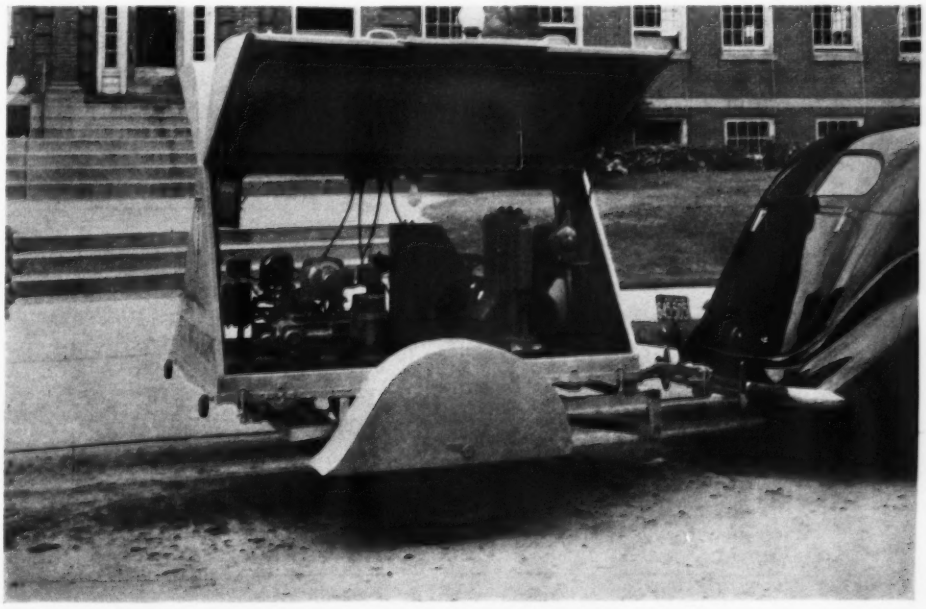
Farm homes, country clubs, suburban areas are markets for this equipment

OF the many ways to obtain electric pump business in which the Sanitary Plumbing Co. of Norwalk, Conn., places greatest faith is in the use of its extensive pump service department. J. M. Folger, manager of this company, when seen recently, revealed that his entrance into power-water selling came via the service route and that it had required 14 years of persistent endeavor to collect the company's present owner's list of between 700 and 1,000 names.

Folger wouldn't part with this list for any consideration. It has been the "bread-and-butter" mainstay, both of his pump and of his plumbing business for some years back. So important is this pump owner's file that special data cards have been secured for uniformity's sake. On these are listed customers' names, addresses, types and makes of pumps owned; serial numbers, types, sizes and makes of motors; types and sizes of tanks; whether shallow or deep well types of water system are in use and like information.

The net result of this high grade attention to details on the part of the Sanitary Company is that folks all over Fairfield County, in which Norwalk is located, have come to know that they are most likely to obtain quick service here and regard Folger and his company as headquarters. While the company's repair business is substantial, even more important is its replacement and new-customer sales volume, which, as inferred, reaches Sanitary via its service department.

(Continued on Page 125)



The trailer shown at the right is used to display and demonstrate water system pumps. Detachable legs make it possible for the trailer to remain upright when not attached to the car and power is obtained from an extension cord

Please Remit—*Letters Collect*

Collection letter survey indicates approved methods of getting the money

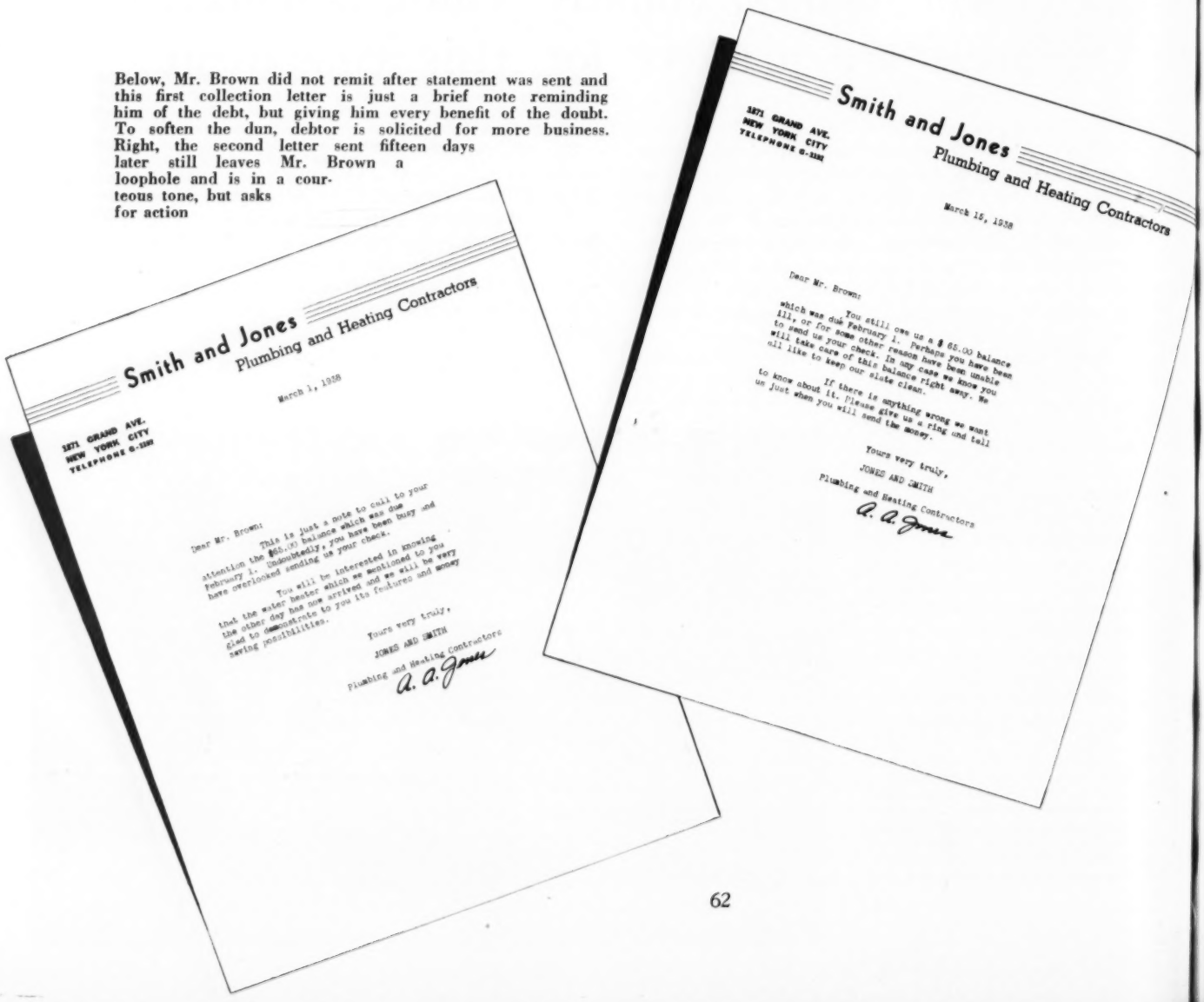
A CONTRACTOR-DEALER recently wrote us requesting help in making up effective collection letters. This is typical of numerous inquiries and requests for information. The following was obtained for that reader and is based on a broad survey of the most recent and approved methods of writing effective collection letters.

Modern collection letters are designed to bring in the money but keep the customer. The survey indicates good collection letters are brief, concise and potent—they go right to the point. They are courteous but exacting—they ask for the money. They are as natural as conversation—but call for positive and immediate action. They are individual and personal—without being intimate.

Such letters are rather difficult to write and there are few general rules for planning them. Each defaulted account offers its own individual problem and for that reason form letters have generally been found ineffective for collection use. And of course post cards dunning the customer right in broad daylight usually only offend rather than collect.

When an account is over-due most contractor-dealers

Below, Mr. Brown did not remit after statement was sent and this first collection letter is just a brief note reminding him of the debt, but giving him every benefit of the doubt. To soften the dun, debtor is solicited for more business. Right, the second letter sent fifteen days later still leaves Mr. Brown a loophole and is in a courteous tone, but asks for action



Smith and Jones
Plumbing and Heating Contractors

1271 GRAND AVE.
NEW YORK CITY
TELEPHONE 6-3131

March 1, 1938

Dear Mr. Brown:

This is just a note to call to your attention the $65.00 balance which was due February 1. Undoubtedly, you have been busy and have overlooked sending us your check.

You will be interested in knowing that the water heater which we mentioned to you the other day has now arrived and we will be very glad to demonstrate to you its features and money saving possibilities.

Yours very truly,
JONES AND SMITH
Plumbing and Heating Contractors
A. A. Jones

Smith and Jones
Plumbing and Heating Contractors

1271 GRAND AVE.
NEW YORK CITY
TELEPHONE 6-3131

March 15, 1938

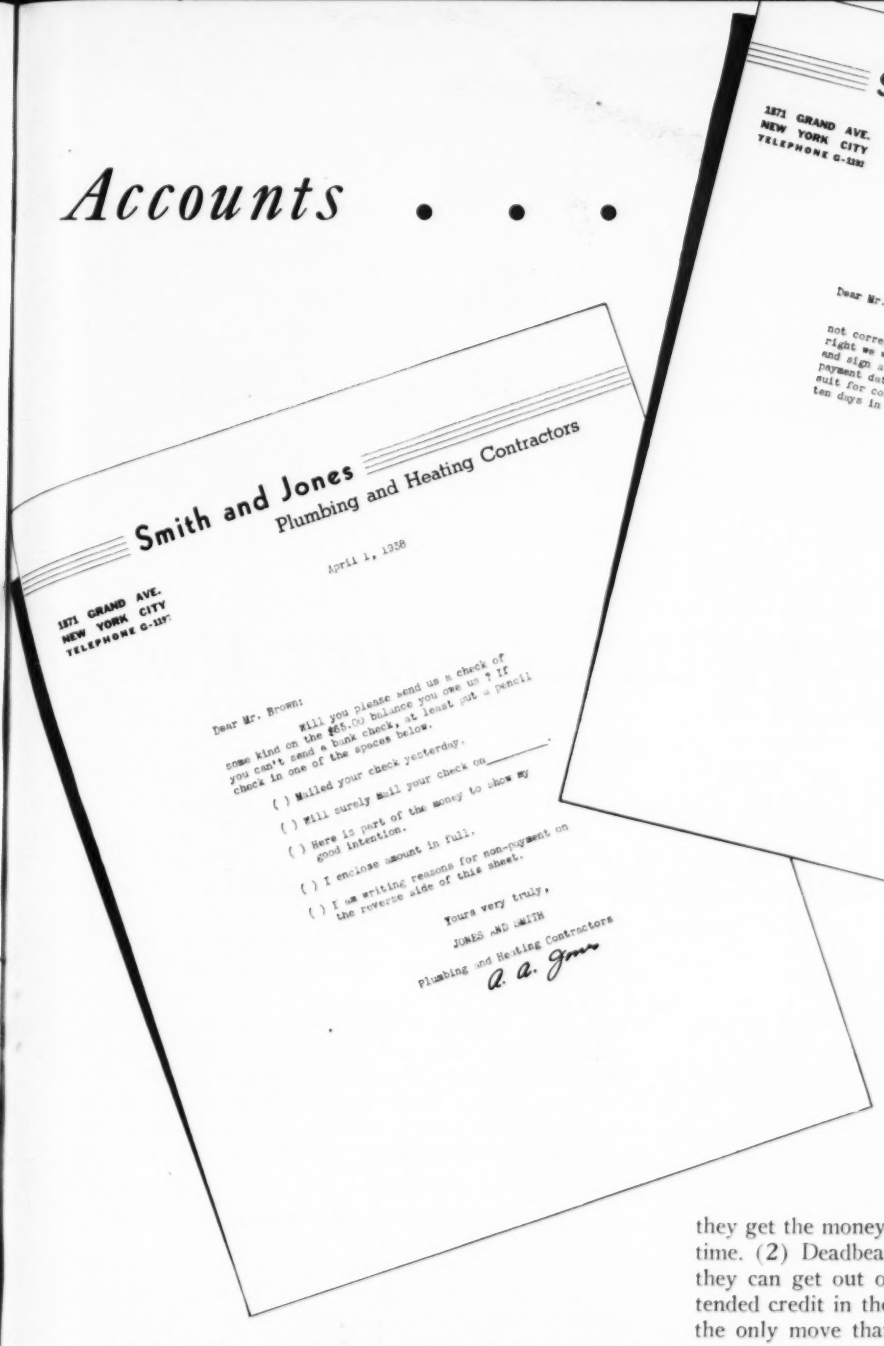
Dear Mr. Brown:

You still owe us a $ 65.00 balance which was due February 1. Perhaps you have been ill, or for some other reason have been unable to send us your check. In any case we know you will take care of this balance right away. We all like to keep our slate clean.

If there is anything wrong we want to know about it. Please give us a ring and tell us just when you will send the money.

Yours very truly,
JONES AND SMITH
Plumbing and Heating Contractors
A. A. Jones

Accounts . . .



Smith and Jones
Plumbing and Heating Contractors

1871 GRAND AVE.
NEW YORK CITY
TELEPHONE G-1187

April 1, 1938

Dear Mr. Brown:

Will you please send us a check of some kind on the $65.00 balance you owe us ? If you can't send a bank check, at least put a pencil check in one of the spaces below.

( ) Mailed your check yesterday.

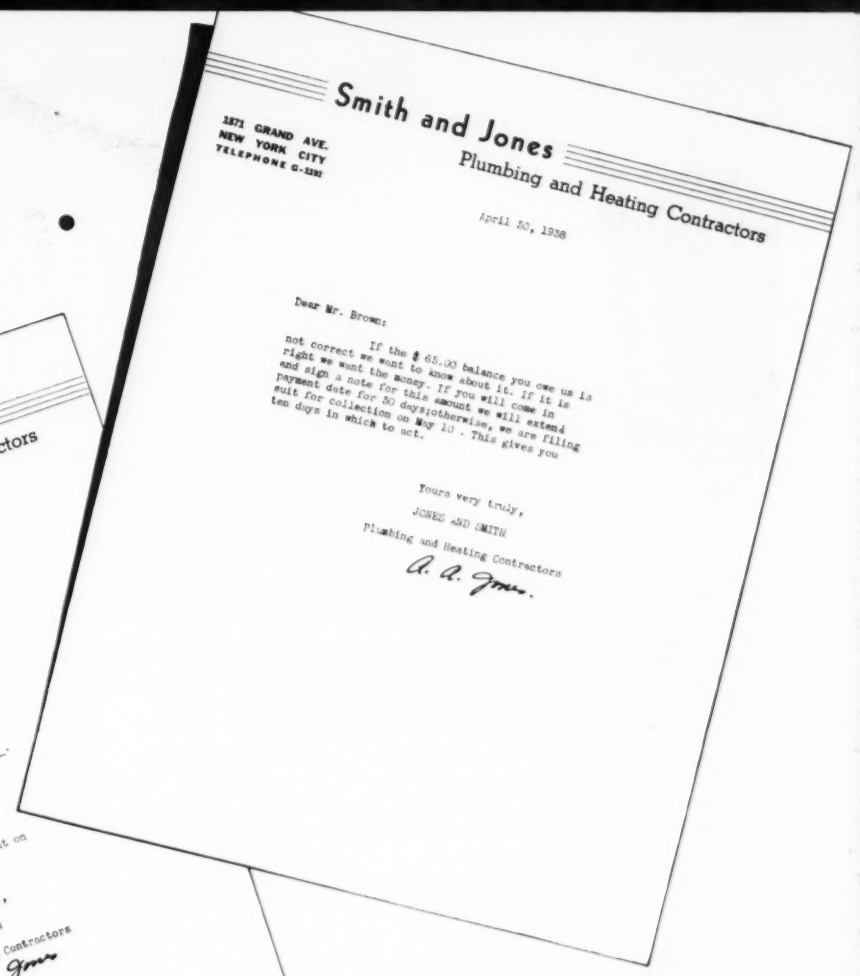
( ) Will surely mail your check on _____.

( ) Here is part of the money to show my good intention.

( ) I enclose amount in full.

( ) I am writing reasons for non-payment on the reverse side of this sheet.

Yours very truly,
JONES AND SMITH
Plumbing and Heating Contractors
A. A. Jones



Smith and Jones
Plumbing and Heating Contractors

1871 GRAND AVE.
NEW YORK CITY
TELEPHONE G-1187

April 30, 1938

Dear Mr. Brown:

If the $ 65.00 balance you owe us is not correct we want to know about it. If it is right we want the money. If you will come in and sign a note for this amount we will extend payment date for 30 days;otherwise, we are filing suit for collection on May 10 . This gives you ten days in which to act.

Yours very truly,
JONES AND SMITH
Plumbing and Heating Contractors
A. A. Jones

Left, the debtor is given a reply form which needs only a pencil or bank check to complete it. This arrangement is aimed at discovering why debt has not been paid. Above, suit is in sight now. This final letter gives the debtor ten days to sign a note or face suit

prefer to send out the first letter about fifteen days after the statement has been posted. This starts the attack before the account is really old and long over-due. The first collection letter may be simply a courteous, personal note extending to the debtor every benefit of doubt and assuming he wants to pay at once, but probably overlooked sending the check. It is even a good idea to add a paragraph suggesting some further plumbing and heating business as that proves the contractor-dealer does not doubt that the debtor will pay, and also takes some of the sting out of the dunning note. Such a letter is illustrated on the opposite page.

DEBTORS SEGREGATED

Before writing collection letters it is usually best to size up the debtor. Debtors may be roughly classified into three groups as follows: (1) Those who can not pay now due to financial trouble. They will often pay after they get the money if they are not offended in the meantime. (2) Deadbeats who have no intention of paying if they can get out of it. They should not have been extended credit in the first place and threat of suit is often the only move that will impress them. (3) Those who are slovenly and unbusinesslike in their ways and prefer putting off payment as long as possible. Paying must be made as simple as possible for them and they must be pushed from the start, but not offended. They will use the slightest offense as excuse for postponing payment.

Poor collection letters can wreck a good collection system. The successful collection letter brings in the money quickly without offense to the customer. Rules for writing effective collection letters which are followed by plumbing and heating contractor-dealers contacted during the survey are as follows:

First of all be brief. The short letter suggests immediate action. The long letter implies delay. Except in unusual cases, the wording should be kept to fifteen lines or less. Many collection letters analysed were found to say the same thing in different ways too often, unnecessarily increasing the length and weakening the appeal.

(Continued on Page 127)

Modern Trucks—*More Money*

Economical and up-to-date trucks get more jobs and handle them efficiently

PERHAPS you have listened to glowing prophecies that the greatest building boom in history is in the offing, and it's ten to one you've resolved not to overlook a single business policy that will add to the profit figure for 1938.

This BOOM, spelled in large caps, has already arrived in Corpus Christi, Texas, a community of 50,000 population situated on the sunny Gulf of Mexico. Just now it would seem that this pulsing town is especially favored. The adjacent oil fields are pouring out a golden flood of wealth; the surrounding, rich agricultural land is producing bumper crops, and tourists are discovering the advantages of this community as a year-round Gulf resort. All these factors are influencing the development of Corpus Christi as an important industrial center and stimulating its growth in a most gratifying way.

These circumstances spelled opportunity in a very unmistakable way in the business alphabet of Fred A. Nord, majority stockholder and manager of the Corpus Christi Plumbing Company. Mr. Nord determined that his company should secure a substantial share of the contract business resulting from the expansion in building. At the same time he reasoned soundly that some provision had to be made to handle the increased volume of business in a profitable way.

BUSINESS DIAGNOSIS

First of all, therefore, he made a careful diagnosis of his business, searching for the means of handling more business and ferreting out costly little leaks in operation which might deprive him of expected profits. Already, he reasoned, his shop and provisions for the storage of materials represented thoughtful, practical lay-out. He found the answer to increased efficiency and saving where many fail even to think of searching for it—in the transportation angle of his business—his shop on wheels.

PROFIT LEAKS IN TRANSPORTATION

Probably inefficient commercial transportation fritters away more potential profits than most contractors dream. Inadequate commercial haulage is one of the most elusive and least considered factors affecting plumbing costs. Transportation costs include both direct costs which should be charged to individual jobs and indirect or general overhead costs so intermingled that they defy bookkeeping analysis. For this reason thoughtful contractors should find Mr. Nord's solution to this troublesome problem both enlightening and instructive.

In recalling the reasoning which lead to his solution Mr. Nord said, "There will be plenty of business for us all, but we who distribute and install plumbing materials are now faced with rapidly rising costs. The problem in business now is how to make money in the face of rising costs. The answer is not found in retracting any part of our service facilities, but rather in expanding those which enable us to handle greater volume, spreading overhead costs thinner and increasing our margin of gross profit."

At the time Mr. Nord was evolving this solution, the

On the opposite page is a picture of the new truck equipment purchased recently by the Corpus Christi Plumbing Company. These trucks proved to be a sound and economical investment

Corpus Christi Plumbing Company was maintaining four somewhat worn and obsolete commercial vehicles. They had been, Mr. Nord began to realize, a very costly economy. Not only were they frequently out of repair and greedy consumers of gas and oil, but they were totally inadequate to keep his six master plumbers and helpers supplied with materials on jobs. As 1937 got under way and peak conditions approached (his six master plumbers have not been idle even one hour to date), Mr. Nord saw the return of a condition that had plagued him time and again, namely the costly loss of the plumbers' time while waiting for material on the job. Face-the-fact analysis revealed that the time lost and paid for at the rate of $1.00 per hour was actually in excess of the cost of purchasing two or three additional commercial vehicles. Moreover, the only vice used in his business was attached to one of the trucks. Hence a plumber often tied up a truck for a considerable time while cutting and threading pipe, while another plumber impatiently awaited its use in another part of the city. Experience is always the best teacher.

ADDITIONAL SAVINGS

Mr. Nord and his capable secretary-treasurer, Mrs. M. Ingle, further calculated that they were missing other possible transportation savings. They could, if they had efficient and economical trucks, pick up their own fixtures and supplies from the wholesale houses, saving some $50.00 on each contract job by driving 158 miles to San Antonio. But with their inadequate transportation equipment they could not take advantage of this possibility since all four trucks were needed to keep their master plumbers on the job.

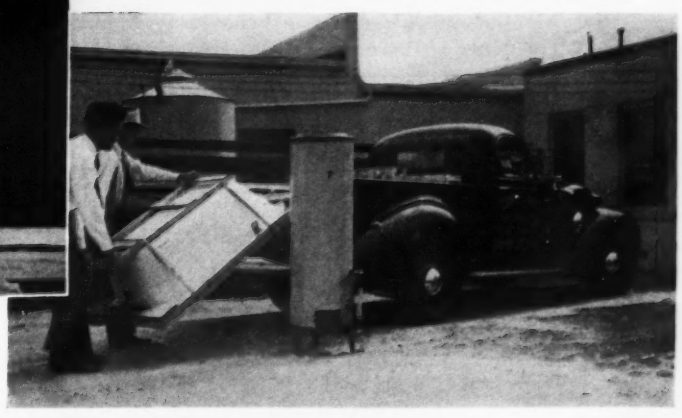
ACTION

It didn't take Mr. Nord long to make his decision and put it into action. He applied his "1938 working rule" of expanding those facilities which would enable him to handle greater volume and of spreading overhead "thinner." He replaced every piece of out-moded equipment in his commercial transportation fleet, save only his personal car which he also used for business. Six modern, speedy all-steel Coupe-Express units were purchased. These trucks were as trim and handsome as the sleekest pleasure car on the market, combining with their fine appearance and passenger-car comfort, maximum utility and operating economy. All the predictions of Mr. Nord's analysis were substantiated in the immediate improvement in his business; his six master plumbers are now able to handle efficiently an increased volume of business; haulage from the wholesale houses is steadily netting him substantial savings; the operating economy of the new vehicles plug up another costly profit-leak; the driver-comfort provided by these new units rests his plumbers between jobs and renews their efficiency. Furthermore, their pride in the Corpus Christi Plumbing Company has been heightened and is reflected in an attitude of satisfaction and conscientious endeavor in their jobs.

Additional advantages in taking this step came to light

(Continued on Page 129)

The new trucks have been lettered with attractive signs and have proved to be one of the company's best advertising mediums. The first day they were on the street more unsolicited telephone inquiries were received than there had been for weeks



Graphic—

HEAT is added to the air in a room by the individuals therein in two ways: first by sensible heat given off from the higher temperature skin surface and, second, by means of moisture which is evaporated from the skin and given off in the breath. It has been found that the moisture given off acts as a sort of a body temperature regulator, being increased by the addition of perspiration when the sensible heat given off is reduced by a rise in the surrounding air temperature.

Within the usual temperature limits of the air conditioned room (which may be assumed as 70 to 85 deg. Fahr. dry bulb), the body emits a total of about 400 Btu. This is divided into sensible and latent heat of about 300 Btu. per hour and 100 Btu. per hour respectively in 70 deg. Fahr. air and ranging down on the sensible heat and up on the latent heat to around 220 Btu. per hour sensible and 175 Btu. per hour latent in 85 deg. Fahr. air.

The total heat and the division into sensible and latent heat are shown graphically in the chart given in Fig. 1 where three curves are given, one being the total heat and the other two the sensible and latent heat of which the total heat consists. By the use of these curves the sensible heat, the latent heat, or the sum of both may be read for any surrounding air temperature between 70 deg. Fahr. and 85 deg. Fahr. dry bulb.

As the maximum room conditions when cooling during the hottest weather are assumed at 80 deg. Fahr., with 50 per cent relative humidity, the number of Btu. per person at rest under such conditions amounts to around 220 Btu. sensible heat and 175 Btu. latent heat, making a total of 395 Btu. total for each person. In the curves shown in Fig. 5 the amount of Btu. for any

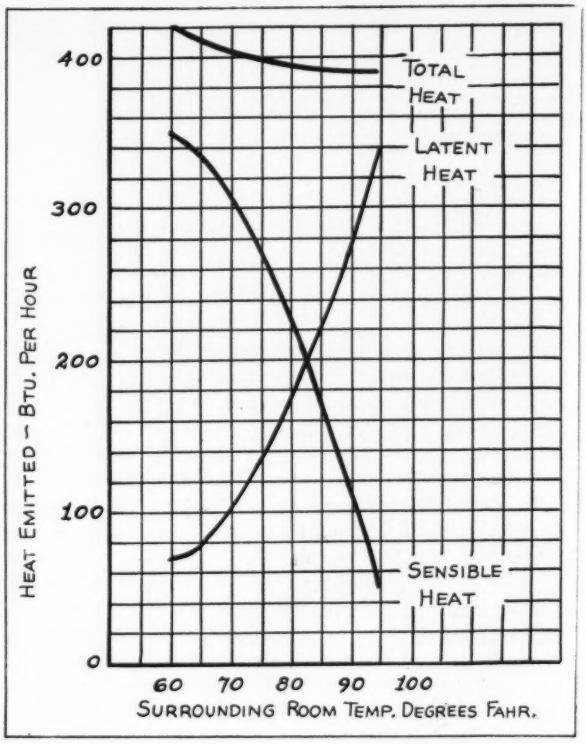


Fig. 1—This chart shows the total, latent and sensible heat emitted per person at the room temperatures indicated here

Equipment, sensible and work determined by use

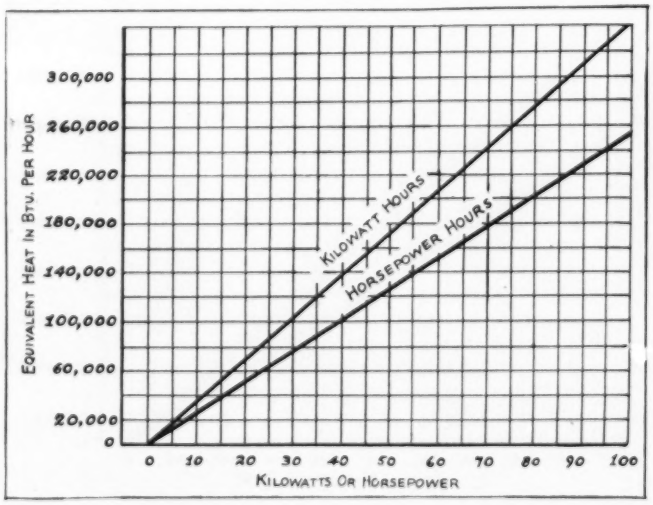
number of persons from 1 to 100 may be read directly from the curves for sensible heat and/or latent heat as desired. For a larger number of persons than 100, the larger number may be divided by some factor to bring the number down to within the capacity of the curves and then the result obtained from the curves should be multiplied by the divisor used. For example, with 1,000 persons this may be divided by 10 giving 100 persons, the result for 100 persons read off the chart and this result then multiplied by 10 to obtain the amount for 1,000 persons.

Latent heat also may be expressed in grains of moisture (there being 7,000 grains to a lb.) and this equivalent is obtained by dividing the latent heat by 1,000 Btu. to determine the number of lb. of moisture equivalent and then multiplying this by 7,000 the number of grains to a pound. Thus at 80 deg. Fahr. surrounding temperature the average latent heat given off per person is 175 Btu. and

$$\frac{175 \text{ Btu.}}{1{,}000 \text{ Btu.}} \times 7{,}000 \text{ gr. equals } 1{,}225 \text{ grains}$$

The 1,000 Btu. used in the above is the latent heat required to vaporize a lb. of water at atmospheric pressure or the amount of heat given up by a lb. of vapor in

Fig. 3—Motors and electric appliances give off about the amount of heat in Btu. per hour as is shown on the chart below



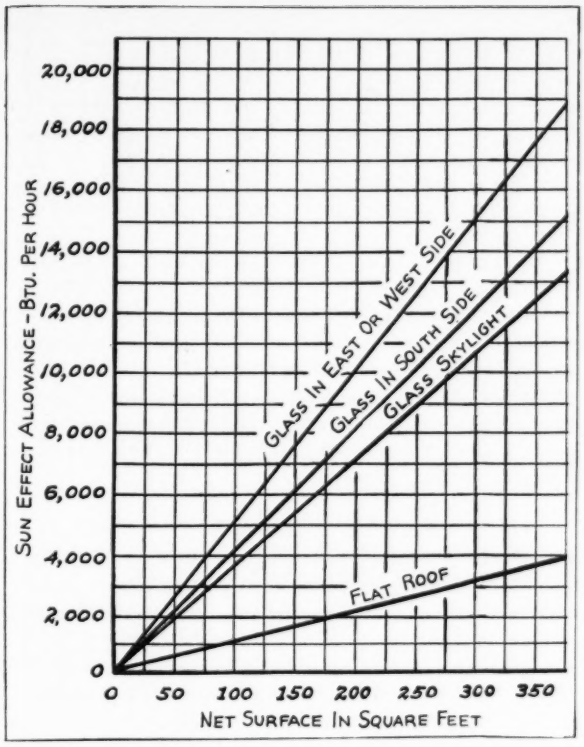


Fig. 2—Shown here is the allowance to be made for sun effect based on the amount of glass on the walls or on the roof

latent heat gains in a. c. of interpretive charts

condensing into water at the same temperature and under atmospheric pressure. The figure really is 970.4 Btu. but 1,000 Btu. is commonly used as a round figure in making this calculation. The grains equivalent to the latent heat are shown in the right hand scale of Fig. 4 and the Btu. equivalent to the grains on the left hand scale. It should be noted that the grains apply only to the curve for latent heat and not to the other curves on the chart.

Sun effect is a term employed to designate the heat gain in the room due to sunshine, as distinguished from other sources of heat addition. If a thermometer is hung in the shade it will indicate the temperature of the surrounding air but, if the shade is removed and the thermometer exposed to the sun, the thermometer immediately rises and shows a higher temperature. This rise is due to the "sun effect" and the higher temperature is not that of the surrounding air but is that of the surrounding air *plus the sun effect*. Owing to the constant changing of the angle of the sun's rays, the time element before the sun effect can penetrate through the construction and add heat to the room, together with other variables, the Btu. allowance to be made for the heat gain from this source is somewhat controversial.

One of the better methods of treating this subject is

A. C. Solutions

given in Alt's "Practical Air Conditioning" in which actual tests of sun effect on an office building are used as a basis to determine allowances to be made. As sun effect through glass is almost immediate and of considerable amount, a Btu. factor for glass was determined from the tests and this was then increased by the sun effect on 6 sq. ft. of wall. The sum of these two amounts then gives the sun effect for a square foot of glass and an accompanying 6 sq. ft. of wall. By this means the use of the combined figure on the glass also includes an allowance for the wall as well. In cases where the building construction does not have the usual ratio of 6 sq. ft. of wall to one square foot of glass these factors would not be strictly true, but on the other hand, the sun effect through a wall is relatively so small that the error resulting from some other ratio likewise would be relatively small.

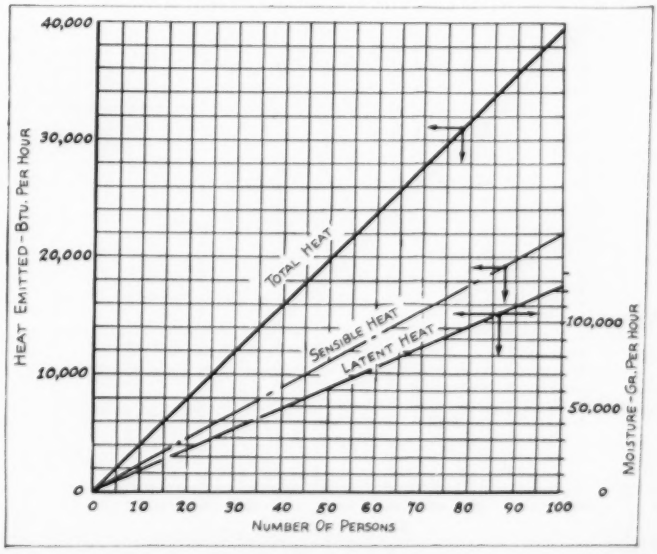
The factors proposed consist of:

South wall glass 40 Btu. per sq. ft.
East and West wall glass 50 Btu. per sq. ft.
North wall glass 0 Btu. per sq. ft.
Skylight glass 35 Btu. per sq. ft.
Flat Roof exclusive of Skylights 10 Btu. per sq. ft.

and these factors, while easy to apply, give results comparable to other methods and have the advantage of being based on actual test results rather than arbitrary rules of thumb.

In cases where a room has more than one exposure the sun effect will not be at the maximum on more than one side at a time. That is to say, when the sun is at a maximum on the east side in early morning it is not at

Fig. 4—"Grains equivalent to the latent heat are shown on the right hand scale and Btu. equivalent on the left scale"



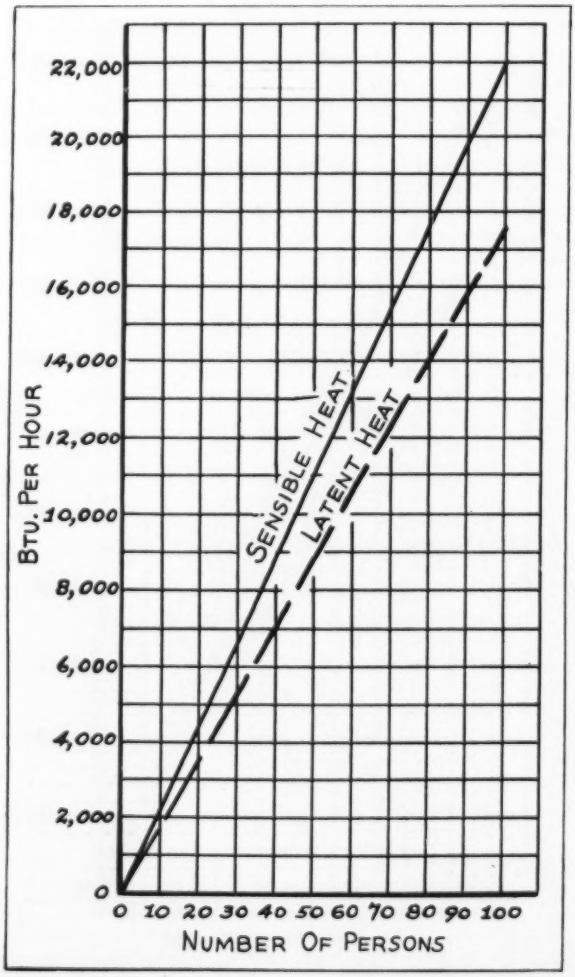
a maximum on the south side or roof and does not shine at all on the west side. At noon the sun effect reaches a maximum on the south side and the roof simultaneously; in late afternoon it reaches a maximum on the west side but is reduced on the south side and roof while the east side is in the shade. Consequently there are three sun effects which should be considered and the heat gain from this source to be used will be the largest *one* of the *three* effects.

These three combinations consist of:

(a) East Side.
(b) South Side plus Roof (if on top floor).
(c) West Side.

In cases where the room has a south wall and roof it usually will be found that (b) forms the greatest heat gain; when other rooms are above and no roof sun effect exists the maximum gain is likely to be (a) or (b) whichever has the larger glass surface. While the total glass surface generally is used in making sun effect calculations, in very close work the *height* of the windows on the south side may be reduced by the amount the glass is inset back of the wall lintel while on the east and west side the *width* of the window may be reduced one-half the amount of inset. This is to allow for shade cast on the glass by the construction projection beyond the glass.

Fig. 5—Indicated on this graph is the latent and sensible heat emitted in Btu. per hour based on the number of people



For example a 7 ft. wide × 8 ft. high window set 12 in. back of the lintel on the south side of the building instead of having

7 ft. × 8 ft. or 56 sq. ft.

area subjected to sun effect actually would have

7 ft. × 7 ft. or 49 sq. ft.

in the sun at noon while the same window on the east or west side would actually have

6½ ft. × 7 ft. or 45½ sq. ft.

exposed to the sun at sunrise or sundown according to the wall in which the window is located.

For the ordinary method of calculation let it be assumed that a room has an east, south and west wall with a roof immediately above. The glass surface is as follows:

East 400 sq. ft.
South 300 sq. ft.
West 550 sq. ft.
Roof 2,000 sq. ft.

According to this method the sun effect would then be:

(a) 400 sq. ft. × 50 Btu. or 20,000 Btu.
(b) 300 sq. ft. × 40 Btu. or 12,000 Btu. } or 32,000
2,000 sq. ft. × 10 Btu. or 20,000 Btu. } Btu.
(c) 550 sq. ft. × 50 Btu. or 27,500 Btu.

and in this case (b) is the greatest and should be used as the maximum sun effect.

Had another room been above instead of the roof the figures would be:

(a) 400 sq. ft. × 50 Btu. equals 20,000 Btu.
(b) 300 sq. ft. × 40 Btu. equals 12,000 Btu.
(c) 550 sq. ft. × 50 Btu. equals 27,500 Btu.

and in this event the maximum effect is (c) and should be used for the heat gain from this source.

All electric current used in the room turns into heat and must be removed by the cooling system. In the case of electric lights the watts for each bulb should be taken and the total watts changed into kilowatts by dividing by 1,000 watts. The heat equivalent of each kilowatt of current used in 3,415 Btu.

ELECTRIC MOTOR EFFECTS

Electric motors are usually rated in horsepower which, however, is the *output* and not the current *input*, the latter may run 10 to 25 per cent greater. Motors, however, are generally not loaded up to 100 per cent of their rated horsepower and so it is probably more correct to use simply the horsepower rating without increasing this to cover the motor losses. The heat equivalent per horsepower is about 2,546 Btu.

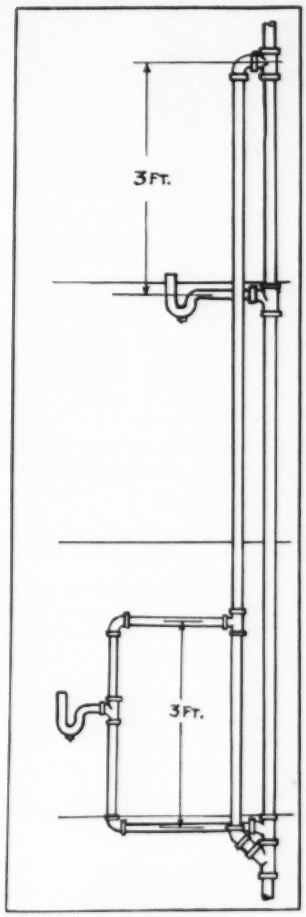
The curves given in Fig. 3 may be used to determine the Btu. equivalent for any number of kilowatts or horsepower up to 100; larger amounts also may be found by dividing the larger amount by a divisor sufficiently large to reduce the amount to 100 or less, then multiplying the Btu. obtained from the curve by the same divisor. Thus 1,000 kilowatts would be divided by 10 to reduce it to 100 kw., and this is found on the curve to be 341,500 Btu. Multiplying this 341,500 Btu. by 10 gives 3,415,000 Btu. as the equivalent of 1,000 kw.

The chart given in Fig. 2 will be an aid in calculating sun effect. In this chart the net surface areas are given in square feet on the scale along the bottom of the chart

(Continued on Page 129)

Outstanding . . . .

Features of New York City's new plumbing code are presented here. Use of unit fixture method in sizing vent, waste and soil piping adopted; provisions of new code now prohibit wet vents



IN determining waste and vent pipe sizes in its new plumbing code, New York City has followed the unit fixture discharge which was established in the Hoover Report.

This investigation showed that the discharge from a lavatory having 1¼ in. waste connection, was at the rate of almost exactly 7½ gal. per minute, or 1 cu. ft. per minute. This was made the unit of discharge, and from it the amount of discharge per minute for all other fixtures was established and used as the basis for determining the sizes of all waste and vent stacks, house drains and house sewers.

INTERESTING FEATURE

This might be considered one of the interesting features of the new plumbing laws. New York's table of fixture units, on which the entire drainage and vent structure is based, is as shown in the following schedule of fixture units.

This determination of fixture discharges was also used to develop tables governing drainage and vent pipe sizes which are shown further on in the text. Among these are tables which give the minimum size of individual soil and waste branches and the sizes of soil and waste stocks.

Fig. 1—The drawing at the upper right hand corner shows the proper connections for the top and bottom of the main vent stack

TABLE I—FIXTURE UNITS

Fixture or Group	Number of Units
One lavatory or waste basin	1
One bathtub	2
One laundry tray	2
One sink (except slop sink)	2
One combination fixture	3
One urinal	3
One shower bath	2
One floor drain	2
One slop sink	3
One slop sink with flushing rim	6
One water closet	6
One drinking fountain	½
One dental cuspidor	½
One bathroom group containing one water closet, one lavatory and one bathtub, with or without shower, or one shower stall	6
One bathroom group containing one water closet, one lavatory, one bathtub and one shower	7
Sterilizers with ½ in. waste connections	½
Swimming pools, each 1,000 gals. capacity	1

(Where the term "water closet" is used, it is intended to include bedpan washers, hoppers and similar fixtures receiving fecal matter.)

For fixtures other than those mentioned in the above list, the number of units shall be established by the size of the waste connections, on the following basis:

Size of Waste Outlet in Fixture	Number of Units
½ in., ¾ in., less than 1 in.	½
1 in.	1
1¼ in.	2

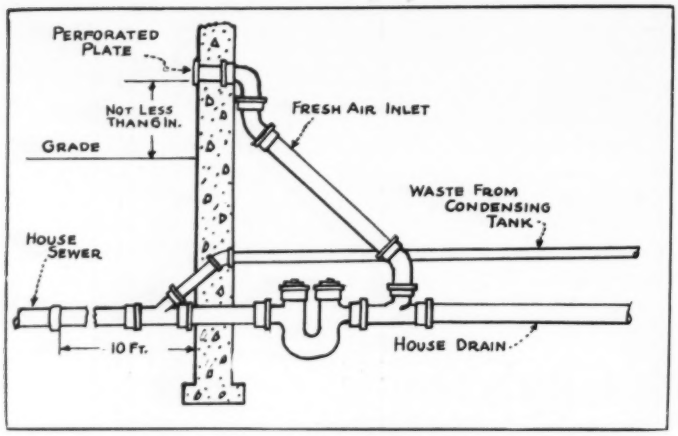


Fig. 2—Every structure in New York City must be provided with a house trap. Typical method of connection is illustrated here

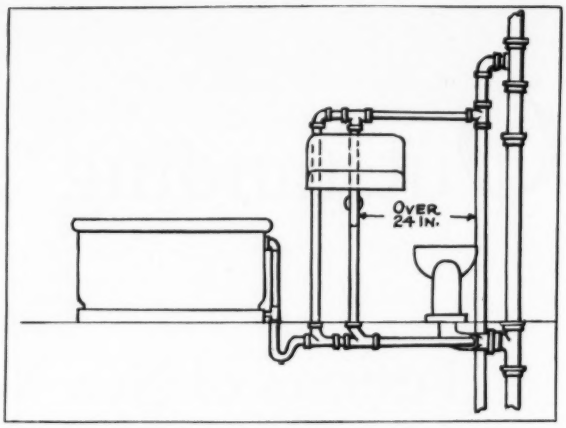


Fig. 3—The venting of a bath tub, lavatory and water closet, when they are located on the top floor, is indicated above

Size of Waste Outlet in Fixture	Number of Units
1½ in.	3
2 in.	5½
3 in.	15
4 in.	30
5 in.	50
6 in.	80
8 in.	160

Of interest in this connection is the original table of fixture units, given below:

THE HOOVER TABLE OF FIXTURE UNITS

Fixture	Fixture Units
One lavatory or wash basin	1
One kitchen sink	1½
One bathtub	2
One laundry tray	3
One combination fixture	3
One urinal	3
One shower bath	3
One floor drain	3
One slop sink	4
One water closet	6

The new code covers the trapping and venting of fixtures very well. In the first place, it gives definite specifications for the fixture trap and its connections. This is shown in Fig. 7. It is required that fixture traps shall have a seal of a 2 in. minimum depth. The pitch of the horizontal waste from the trap to its vent opening shall not be greater than the bore of the waste. This specification is necessary in the correct operation of continuous vents, as called for in the code. Also continuous venting makes it necessary that the opening of the vent into the waste shall be at a point above the level of the dip of the trap, as is required. Finally, the vent connection is to be no further away from the dip of the trap than 24 in. The latter specification is especially commendable, in view of the fact that many plumbing codes give this feature no attention. The above venting requirement applied to top floor or topmost fixtures is shown in Figs. 5 and 3. In Fig. 5 both lavatory and bathtub may be installed without individual vents because they are within the 24 in. limit. In Fig. 3, however, both fixtures are outside this limit, and therefore, even though topmost fixtures, they must be vented.

A comparison of Fig. 3 venting with venting of the same combination of fixtures under the Hoover code, now followed by many city plumbing codes, as shown in Fig. 4, will be of interest. The Hoover code would allow the vent of the lavatory to act also as the vent for the bathtub. In other words, wet venting the bathtub would be allowed. The New York City practice would not allow this. In calling for strict individual venting of all

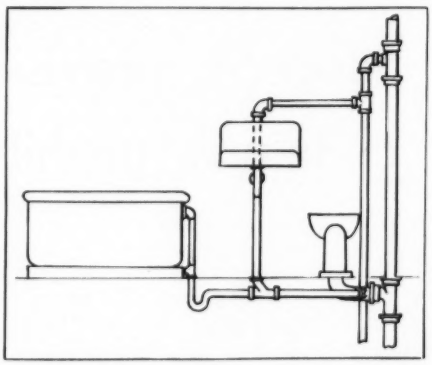


Fig. 4—The above illustration shows venting of a type which is no longer allowed under New York City's plumbing code

fixtures, the New York code rules out all wet vents. Another point that the New York code now settles definitely concerns the use of circuit and loop venting on batteries of plumbing fixtures. This type of venting is not allowed here. In batteries, each individual fixture must have its own individual vent, just as shown in Fig. 6.

The new code also contains definite instruction concerning the connection of the main vent stack into the main waste and soil stack at top and bottom. This specification is covered by Fig. 1. The top connection must be at least 3 ft. above the top waste connection, and the lower connection at least 3 ft. below the lowest branch vent connection.

Under the new code the house trap and the accompanying fresh air inlet are still retained. Every structure must provide such a trap on its house drain; Fig. 2 illustrates this.

In the matter also of roof connections for soil and waste and vent stacks passing through the roof, the new code is explicit, Fig. 8 covering the several features. In

the case of a roof having as sharp a pitch as 30 degrees, the roof extension must be carried at least 1 ft. above the roof; where the pitch is not so sharp, this distance is made 4 ft., and when the roof is used for purposes other than mere protection against weather, the extension must extend at least 5 ft. above the roof. Where a stack comes through the roof within 10 ft. of a door or window, it must be carried at least 3 ft. above that opening.

FINAL POINT IN CODE

A final point is that the New York code makes special mention as follows: "When possible the base of the vent stack shall receive the wash of the adjoining soil or waste stacks". In Fig. 1 the connection is so made that this point is covered. Also the connections may allow the washing of the base or foot of the vent stacks by all three fixtures and by all fixtures above.

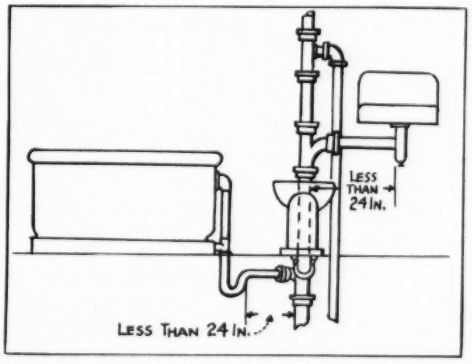


Fig. 5—Shown here are the connections for the venting of a top floor bath tub, lavatory and water closet close to the stack

Comparison of the New York and the Hoover tables of fixture units shows several differences. New York allots only 6 units to a complete bathroom group of three fixtures, whereas the Hoover allotment would be the sum of the fixture units for the three fixtures, or 9 units.

It is very seldom that more than one of the bathroom fixtures is used or flushed at the same time; so that for all practical purposes, bathroom discharge requirements would seem to be covered by allotting the number of fixture units represented by the water closet.

Based on the foregoing scientific determination of fixture discharges, the New York City code shows five additional tables governing drainage and vent pipe sizes, several of which are reproduced here.

MINIMUM SIZE OF INDIVIDUAL SOIL AND WASTE BRANCHES

Fixture	Size in in.
Water closet	3
Floor drain	3
Urinal	2
Slop sink	3
Sink (except slop sink)	2
Bathtub	1½
Laundry tray	1½
Shower bath	2
Lavatory	1½
Drinking fountain	1½
Dental cuspidor	1½
Sterilizers with ½ in. waste outlet	1½
Combination fixture (laundry tub and kitchen sink)	2

Minimum sizes of soil or waste branches to individual fixtures shall be in accordance with the following table:

BRANCH SOILS AND WASTES

Maximum No. of Fixture Units Permitted	Maximum No. of Water Closets Permitted	Branch Diameter in in.
2	0	1½
9	0	2
20	0	2½
35	1	3
100	11	4
250	28	5

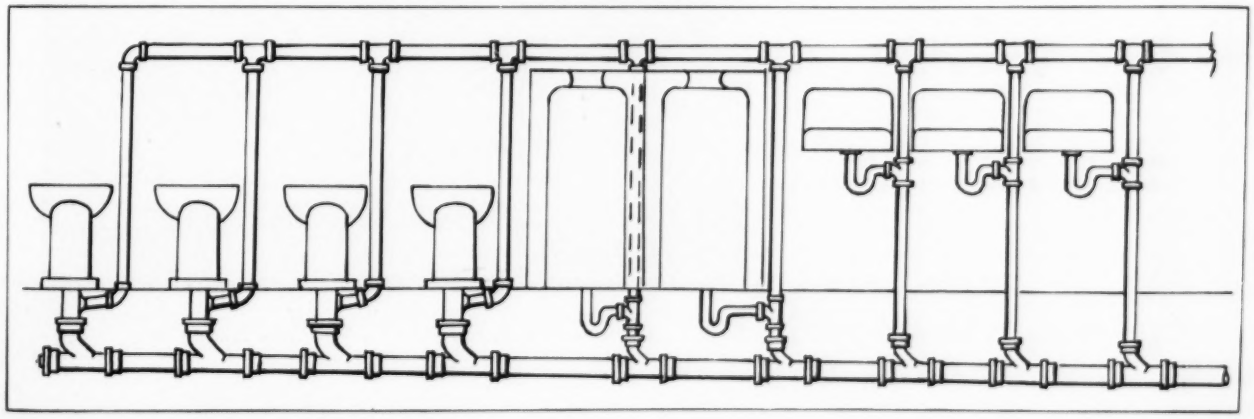
The required size of branch soils and wastes receiving the discharge of two or more fixtures shall be determined on the basis of the total number of fixture units drained by them in accordance with the following table:

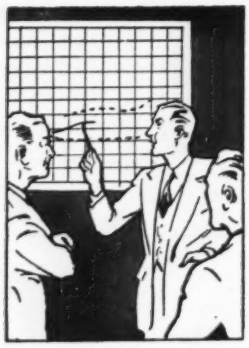
SIZES OF SOIL AND WASTE STACKS

Maximum No. of Fixture Units Permitted	Maximum No. of Water Closets Permitted	Diam. of Stack in in.	Maximum Developed Length in Ft.
4	0	1½	50
14	0	2	75
36	0	2½	100
90	1	3	150
400	40	4	300
1000	120	5	500
1800	200	6	Unlimited
3500	400	8	Unlimited
5000	600	10	Unlimited

(Continued on Page 130)

Fig. 6—One interesting feature of the new plumbing code is the method of making the connections for large batteries of fixtures such as are to be found in all public buildings. Here the New York City code demands that there is a vent for each fixture





Business

Trend is Mixed . . . Expect FHA Impetus . . .

Industry Leads 1936

• *January 1938 index shows increase of 11.67 per cent over January 1936 business.*

Observing the trend of business as shown in the chart on this page, it is apparent that 1937 was not a normal year as far as seasonal sales are concerned.

For example, at this time last year, in accordance with skyrocketing general business conditions, an unusual plumbing and heating volume was being enjoyed. This situation gained momentum until an abnormal peak was reached sometime in March. Hence, it will be increasingly difficult for sales in the first quarter of 1938 to make a good showing when compared to 1937. Similarly, any comparison with the last quarter of 1937 would appear over optimistic.

This situation, coupled with the possibility of comparing 1938 with both 1937 and 1936, have made it desirable to continue using the 1936 level as the basis for comparison.

This 1938 index has begun at 111.67 which represents an increase of 11.67 per cent for January 1938 over January 1936, and a decline of 13.22 per cent from January 1937.

Territorially, the largest gains over 1936 were made in the Mountain, Pacific and South Atlantic regions. The East and West North Central States, however, enjoyed excellent increases of 14.9 per cent and 12.1 per cent respectively. Even the industrial Middle Atlantic and New England areas have maintained a moderate lead over the 1936 level.

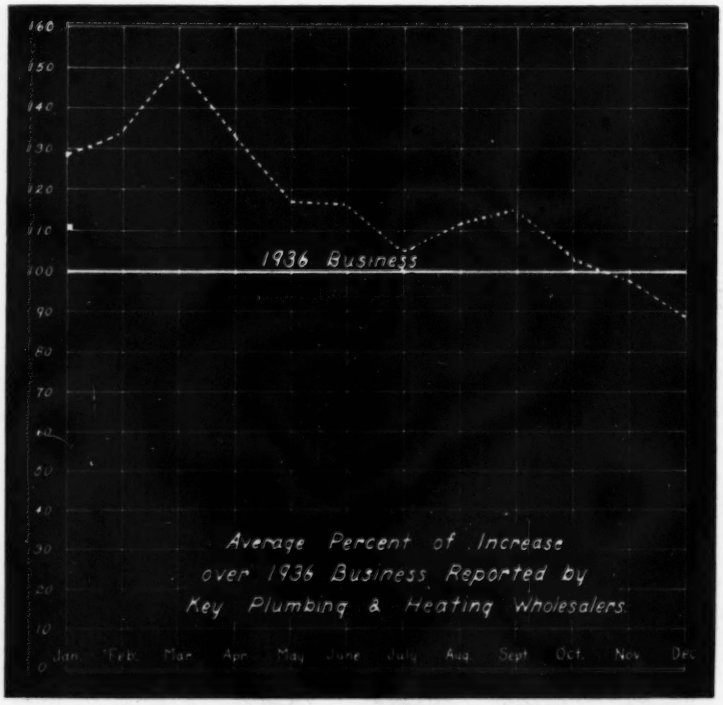
Final 1937 factory shipment figures on most plumbing and heating items are now available. The outstanding increase among these available figures was the domestic stoker advance of 19.12 per cent over 1936. Domestic water softeners ended the year 12.29 per cent ahead of 1936, plumbing brass gained 2.85 per cent, while steel boilers gained 2.19 per cent. The decline of 28.22 per cent shown in factory shipments of range boilers is largely due to abnormal sales in 1936 which in turn resulted from price fluctuations. This type of equipment should, therefore, make an excellent showing over 1937.

A new and vigorous drive is already underway for the increasing of general construction and plumbing and heating volume under the F.H.A. The effects of this stimulant should soon be revealed in these monthly statistics.

Key Wholesalers

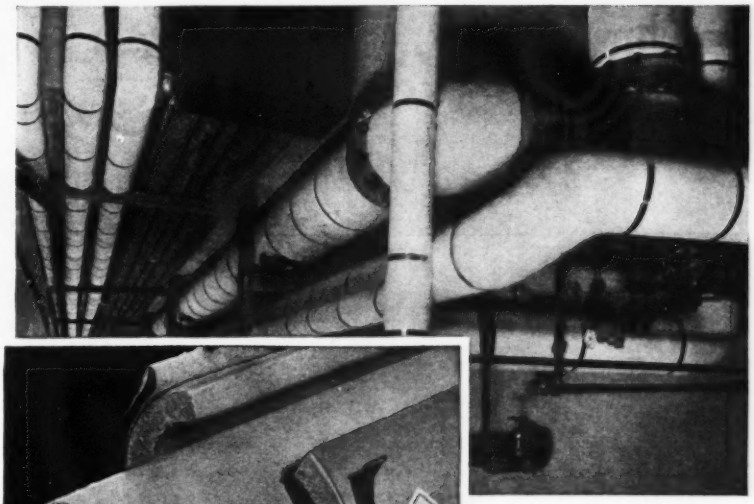
With reports tabulated from 115 wholesalers, an average advance of 11.67 per cent is shown in January over January 1936. Thirty-six of these firms expect February to show a further advance over 1936, 39 expect it to be about the same, 28 expect a decline and 12 did not comment.

New England States: Seven wholesalers in this section report an average gain of 4.13 per cent in January over the same month of 1936. Two of these firms anticipate an increase in February business over February 1936, 4 expect it to be about the same, and one expects a decline.



This chart standing at 111.67, indicates an increase of 11.67 per cent over January 1936, and a decline of 13.22 per cent from January 1937

Efficiency that stands up



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KEY WHOLESALERS

	Percent of Change January, 1938, compared to January, 1936	Prospects for next month compared with the same month of 1936				
		Better	Same	Worse	No Comment	Total Reports
New England	+ 4.13	2	4	1	0	7
Middle Atlantic	+ 2.91	8	11	14	5	38
South Atlantic	+22.60	9	3	1	2	15
East North Central	+14.88	5	11	7	3	26
East South Central	+12.34	0	3	0	1	4
West North Central	+12.12	5	5	4	1	15
West South Central	+19.44	2	1	0	0	3
Mountain	+27.00	2	0	0	0	2
Pacific	+26.70	3	1	1	0	5
TOTAL		36	39	28	12	115

SHIPMENTS OF PLUMBING AND HEATING ITEMS

	Dec., 1937	Dec., 1936	Total 1937	% of Change 1937 Compared with 1936
Steel Boilers				
Number of units	574	915	11,043	+ 2.19
Range Boilers				
Number of units	29,959	85,028	725,702	—28.22
Domestic Water Softening Apparatus				
Number of units	837	1,018	12,792	+12.29
Plumbing Brass				
Thousands of pieces	740	2,008	19,947	+ 2.85
Oil Burners				
Number of units	8,239	11,300	193,180	— 1.88
Mechanical stokers (for residential, apartment and small commercial use)	4,402	5,513	98,521	+19.12

Middle Atlantic States: Thirty-eight wholesalers in this section report an average gain of 2.91 per cent in January over January of 1936. Eight of these firms expect business in February to show an increase over February 1936, eleven expect it to be about the same, while 14 expect a decline and 5 did not comment.

Wholesalers in northeastern New Jersey report—"No sign of any definite turn just now"—"Very little new building"—"Money is very tight"—New York City wholesalers remarked —"Prices have decreased and no new work being done at this time; however, we look forward to the middle of February for improvement"—"We haven't any future delivery orders."

Wholesalers in the southeastern part of Pennsylvania report—"More quotations for future business"—"General decline due to lack of confidence and extreme conservativeness on the part of buyers"—"More estimating and orders on hand at the present time." From central Pennsylvania reports were—"We believe that if prices were stabilized, business conditions would improve immediately"—"This territory looks better for the reason that the state of Pennsylvania is spending a great deal of money on institutions."

South Atlantic States: Fifteen wholesalers in this section report an average gain of 22.60 per cent in January over the same month of 1936. Nine of these firms expect February business to continue to show improvement over 1936, 3 expect it to be about the same, one expects a decline and two did not comment.

In the central part of North Carolina, a wholesaler reported, "Weather conditions better—every effort being made to encourage building, and a great deal of work being figured." From the central part of Virginia a firm expecting an increase in February business reported considerable more activity.

East North Central States: Twenty-six wholesalers in this section report an average gain of 14.88 per cent for January compared with January 1936. Five of these firms anticipate an increase in February over February, 1936, 11 expect it to be about the same, seven expect a decline, and three firms did not comment.

One of these firms anticipating an increase reported a marked increase in pending contracts. Another stated that they have some large orders to go out during the first quarter of 1938.

East South Central States: From the East South Central States four wholesalers report an average increase of 12.34 per cent for January when compared with January 1936. Three of these firms expect February business to be about the same as in February 1936, and the other one did not comment.

West North Central States: In this section fifteen wholesalers show an average increase of 12.12 per cent for January as against January 1936. Five of these firms expect February compared to February 1936 to show an increase, five expect it to be about the same, four expect a decline and one did not comment.

A southern Kansas wholesaler reports that the greater part of the 1937 wheat crop has remained in storage, and should start moving soon.

West South Central States: January reports from three wholesalers in this section show an average gain of 19.44 per cent over January 1936. Two of these firms expect February business to be better than in February 1936, and the other one expects it to be about the same.

Mountain States: From the Mountain States two wholesalers report an average increase of 27.0 per cent for January when compared to January 1936, and both of these firms expect February business to be better than in February 1936.

One of these wholesalers who is located in the western part of Montana reported a housing shortage and consequently a good outlook for new work.

Pacific States: January reports from five Pacific State wholesalers show an average increase of 26.7 per cent for January when compared with January 1936. Three of these firms expect February business to be better than in February, 1936, one expects it to be about the same and the other one expects a decline.

Air Conditioning

Forty-five utilities report 101 Summer and year 'round air conditioning installations made on their power lines during January, which compares with 146 for the same utilities in January of last year. This is a decline of 30.82 per cent. These installations account for 2,675.54 horsepower, which compares with 9,040.80 horsepower in January last year—a decline of 70.41 per cent.

Oil Burners

January oil burner permits, as reported by 46 cities were 1,841 in 1938 as compared to 2,463 in 1937, a decrease of 26.72 per cent.

Cities showing increases for January were principally on the East Coast. Some of these cities for which figures are available are Boston and Springfield, Massachusetts and New Haven and Bridgeport, Connecticut. Seattle,

If Builders and Owners knew what Plumbers know—

--they would ALL use San-Equip MASTER

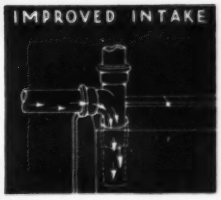
EVERYWHERE veteran plumbers recommend the San Equip MASTER Septic Tank. The experienced plumber has seen the drawbacks of inferior septic tanks. He has had to dig up lawns, uncover entire tanks, clean out pipes, repair drainage defects. It's a troublesome, expensive job, disagreeable both to the home owner and to the plumber.

Mr. Plumber—Set your builder straight on *the facts* about septic tanks. They can't possibly know as much about septic tanks as you do. Recommend San Equip MASTER Septic Tank. It will prevent hardships for the home owner, ill will for the builder and headaches for yourself. And besides this you'll make a better profit on the job.

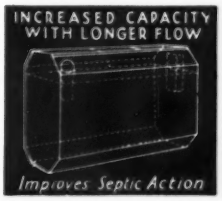
If your regular jobber does not yet stock San-Equip MASTER Tank, wire us. We will ship on approval from our nearby warehouse—billing you later as you instruct.

● *MAIL the coupon below for the free descriptive booklet "Safer Sewage Disposal."*

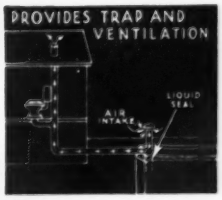
Only San-Equip MASTER SEPTIC TANK has All these features



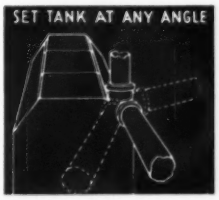
1. Improved top intake permits sewage to enter tank rapidly, keeping the intake baffle clear and reducing the likelihood of clogging.



2. Horizontal tank gives increased capacity and longer flow with improved septic action. Results in safer effluent.



3. Provides automatic trap and house ventilation. T-intake extends above ground; below liquid level in tank.



4. Use of T-type intake allows tank to be set at any angle, simplifying installation and assuring perfect position for proper drainage.

5. Less dirt to move. The excavation for the Master tank need be only slightly larger than the tank itself.

6. Intake extension above ground marks the location of the tank and provides access to intake without digging.

SAN-EQUIP INC.
643 E. Brighton Ave., Syracuse, N. Y.
Please send me free booklet "Safer Sewage Disposal."

Name.....

Address.....

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My jobber is.....

DECEMBER BUILDING PERMITS—Most Active Cities

State and City	New Residential Buildings	Families Provided For	New-Non-Residential Buildings	Total Including Repairs
NEW ENGLAND STATES				
Hartford, Conn.	$ 50,100	10	$ 1,331,327	$ 1,468,592
Boston, Mass.	1,782,200	136	175,885	2,384,349
MIDDLE ATLANTIC STATES				
Newark, N. J.	223,500	68	134,500	500,044
Buffalo, N. Y.	18,500	3	188,039	325,759
New Rochelle	566,600	139	548	582,883
New York City:				
The Bronx	14,575,500	3,046	2,256,350	17,363,576
Brooklyn	4,285,300	1,213	9,366,180	16,107,854
Manhattan	3,374,100	770	11,178,825	17,271,025
Queens	15,554,600	4,678	7,794,371	24,453,141
Richmond	98,050	21	44,830	651,751
Niagara Falls, N. Y.	27,500	7	324,640	371,110
Northport, N. Y.	9,250	3	290,000	303,250
Philadelphia, Pa.	274,500	63	176,330	849,512
Pittsburgh, Pa.	78,340	14	600,275	774,770
EAST NORTH CENTRAL STATES				
Chicago, Ill.	177,000	30	1,301,235	1,810,493
Elgin, Ill.	17,800	3	438,640	466,290
Dearborn, Mich.	55,500	12	171,760	309,201
Detroit, Mich.	903,845	133	1,247,245	2,521,780
Cincinnati, O.	408,200	68	259,880	837,285
Kent, O.	.....	..	.....	300,000
Milwaukee, Wis.	113,550	24	272,794	496,021
WEST NORTH CENTRAL STATES				
Ottumwa, Iowa	.....	..	300,000	351,750
McPherson, Kansas	2,500	1	325,000	330,935
Minneapolis, Minn.	183,400	52	27,700	569,385
St. Paul, Minn.	114,660	20	531,407	834,775
St. Louis, Mo.	312,000	20	37,130	485,263
SOUTH ATLANTIC STATES				
Washington, D. C.	594,650	119	170,475	1,013,588
Miami, Fla.	447,575	133	61,211	691,276
Augusta, Ga.	6,500	3	251,500	309,247
Baltimore, Md.	343,200	66	508,080	1,062,600
Greensboro, N. Car.	45,192	14	144,558	371,507
Columbia, S. Car.	38,900	14	257,885	304,260
EAST SOUTH CENTRAL STATES				
Leeds, Ala.	.....	..	.....	2,500,000
Louisville, Ky.	59,000	16	252,570	311,570
Memphis, Tenn.	19,500	11	46,280	611,570
WEST SOUTH CENTRAL STATES				
Oklahoma City, Okla.	186,750	63	106,525	316,525
Ponca City, Okla.	.....	..	444,029	447,875
Amarillo, Texas	44,400	6	375,800	440,032
Beaumont, Texas	15,762	9	369,112	448,449
Big Spring, Texas	15,600	5	701,875	720,840
Dallas, Texas	166,325	68	526,267	768,248
Fort Worth,Texas	94,800	40	599,976	804,258
Galveston, Texas	21,600	8	434,253	464,838
Houston, Texas	665,000	130	853,000	1,564,280
Lubbock, Texas	55,601	46	301,520	370,213
San Antonio, Texas	93,577	36	116,837	374,470
MOUNTAIN STATES				
Phoenix, Ariz.	39,600	13	117,630	606,615
Denver, Colo.	241,727	24	7,520	1,237,470
Boise, Idaho	2,500	1	357,225	374,905
PACIFIC STATES				
Long Beach, Calif.	127,475	53	615,350	841,895
Los Angeles, Calif.	1,902,467	608	1,147,211	3,601,128
Oakland, Calif.	229,515	56	176,583	646,954
Pasadena, Calif.	86,685	21	88,571	435,329
Sacramento, Calif.	78,550	24	18,133	618,079
San Diego, Calif.	287,209	97	30,173	364,011
San Francisco, Calif.	422,700	94	275,947	904,301
Portland, Ore.	110,750	29	140,215	318,825

Washington, has also shown a wide gain over January last year.

Stokers

With 20 cities reporting, there were 310 stoker permits issued in January 1938, which compares with 286 of the same month of last year—a gain of 8.39 per cent.

The most important contribution to this gain was made by St. Louis where 109 permits were issued this January, as against 32 in January 1937. This city, incidentally, showed a gain of better than a hundred per cent for 1937 as compared to 1936.

Gas Heating

The American Gas Association reports that there were 195,600 gas house heating customers on the lines of manufactured gas utilities at the end of November 1937. This compares with 187,300 at the end of October, or a gain of 8,300 for the month of November. At the end of November, 1936 there were 165,100 house heating customers on the lines of these utilities, hence there has been a cumulative gain of 18.5 per cent in the year covered. Figures for natural gas utilities are not broken down according to house heating customers.

Building Construction

The value of building permits issued in December showed a marked increase, due largely to a rise in the value of permits issued in New York City where a new building code was scheduled to become effective on January 1, 1938. Reports from the principal cities indicate that the total volume of building for which permits were issued during the month was 52.8 per cent greater than in November, and 25.5 per cent greater than in the corresponding month of 1936. All types of building construction shared in the gain.

The value of permits issued for new homes in December showed a gain of 47.9 per cent as compared with November. This unusual increase was largely in New York City where the aggregate increase in the value of residential permits as compared with November was $27,146,000 or 252.7 per cent.

Building Report

Accommodations were provided in new buildings for 211,265 families in the urban areas of the United States during the calendar year 1937, according to estimates of the Bureau af Labor Statistics.

"This is an increase of more than 12,000 units or 6 per cent as compared with the year 1936," Miss Perkins said. "The increases were attributable to the building activity that prevailed during the first two quarters of 1937. Both the third and fourth quarters of 1937 showed decreases as compared with the corresponding periods of 1936.

"The bureau's figures for 1937 show that, except for cities having a population of between 100,000 and 500,000, there were gains in all size groups as compared with 1936. These increases took place in one-family and two-family types of dwellings.

"The total number of dwelling units provided during the current year was greater than for any year since 1930, when 224,000 units were provided. However, the number provided during 1937 was a little less than 30 per cent of the number provided during the peak year 1925. In that year 752,000 units were provided in new buildings."

Six of the nine geographic divisions of the nation registered increases in the dwelling units provided in 1937 as compared with the previous year. The largest gains occurred in the Middle Atlantic States and the Pacific Coast States. The gain in the Middle Atlantic States was caused mostly by the increase in New York City.

Of the total number of dwelling units provided in 1937, nearly 70 per cent were in one-family dwellings. All geographic divisions, except the West North Central, showed gains in this type of structure.

Business Outlook

A recent account of the quarterly survey published by the Guaranty Trust Co. of New York City, draws an estimate of the outlook for construction and business recovery.

According to the report, even a superficial examination of the available figures indicates that pessimistic statements are greatly exaggerated; and when underlying conditions are taken into account it appears the present situation is in no way comparable with that in 1932 and 1933.

...MR. EMPLOYER—
CHECK THE QUALIFICATIONS
of this *New Type of Craftsman*—

HERE ARE *Five Reasons* WHY HE CAN SOLVE YOUR PROBLEMS, LEARN YOUR METHODS, and UNDERSTAND YOUR EQUIPMENT

One

Our graduates are trained to actually think in terms of Air Conditioning and its Siamese twin, Refrigeration.

Two

First they have had over 1000 hours of home-study, covering every phase of theory and practice of heating, ventilating, and cooling.

Three

Next, in their two weeks of Shop work in Chicago (soon to be four weeks) they have, with their own hands,—under expert guidance, of course,—dismantled and rebuilt practically every type of equipment in use today.

Four

Their Training, from beginning to end, has been directed and supervised by factory engineers working right in the industry.

Five

Before being accepted for Training, every man has had to satisfy us thru investigations (supplemented since January 1st with intelligence and mechanical aptitude tests), that he possessed the qualifications necessary to assimilate this Training, and make good in the field.

MR. EMPLOYER, you are in the Refrigeration or Air Conditioning business, or both.

One of the serious obstacles to the continued growth of your industry, is the ACUTE SHORTAGE OF REALLY COMPETENT MEN for engineering and making air conditioning and refrigeration installations.

Without such men the ultimate Air Conditioning installation cannot result in customer-satisfaction or public buying-approval because improperly engineered, and installed installations will nullify your superior product, defeat your best-laid sales program, kill public desire for your wares, and so still forever the breath of life of the infant industry in which you have cast your lot and made your investment.

Not only is there a recognized shortage of men with any kind of training in the ways of air conditioning, but the incompetence of many now in the ranks constantly results in CUSTOMER DISSATISFACTION and in FINANCIAL LOSS to you.

MORE THAN 100 LEADING MANUFACTURERS "OFFICIALLY" ENDORSE AND RECOMMEND THIS TRAINING!

Only by effective training of men both upon a qualitative and a quantitative basis can your man-power problem be solved and the success of your efforts be insured. This fact demands a course of Training whose personalized methods result in the required QUALITY, yet whose well ordered "mass production" schedules result in the necessary QUANTITY of graduates.

With these requirements in mind, the Refrigeration and Air Conditioning Institute, of Chicago, has moulded its Training Program so that the student is so grounded in theory that he actually thinks in terms of refrigeration and air conditioning, and so that he learns the service and installation of equipment by intimate contact with all conventional types in our laboratory, the only one of its kind, so far as we know, under the actual supervision of factory engineers.

This Training Program is planned to DEVELOP THE UNTRAINED, to teach the PRACTICAL APPLICATION of theory to the COLLEGE TRAINED MAN, and to PERFECT THE PRESENT TECHNICIAN. Thus it makes the benefits of a new profession available for men in all walks of life, and it broadens the source of man-power for your Industry, and gives to the Industry a new type of craftsman.

The individual qualifications of our graduates are recorded in a form which enables you to select at a glance the man best suited to your needs.

Mr. Employer, will you advise us of your requirements, so that we may be of service to you in solving your MAN-POWER PROBLEM?

If you do not have a copy of the Institute's "Report to the Industry"—a 200 page cloth bound book with 17 big photographs—please ask for it on your letterhead.

Ray K. Smith
PRESIDENT

REFRIGERATION & AIR CONDITIONING INSTITUTE
2130-2158 LAWRENCE AVENUE . . . . . CHICAGO, ILL.

This display . . . 6′ x 8′ . . . folds to fit in container 8″ x 8″ x 72″.

BIG DISPLAYS THAT DO BIG THINGS . . . IN A BIG WAY!

Mr. Manufacturer: IF the windows of your dealers are to do a profitable selling job for your equipment they must forcibly bring out a sales message as well as attract and interest customers. CAPEX Mammoth Displays are built to dramatize the actual product! They not only attract, they SELL! CAPEX Displays are carefully designed by master craftsmen for the individual idea and sales message. They enable the manufacturer to secure an effective, giant display at a fraction of what he would expect to pay for such a hand-designed, hand-built display of this type. For years, CAPEX Displays have been given preferred window and department space.

These CAPEX Mammoth Displays (similar to the one above) can be produced by our special process in quantities from 100 to 500, in 6 to 10 colors, for approximately $3.50, each. This price includes the complete display packed in individual cartons and shipped direct to your dealers ANYWHERE!

CAPEX Displays are doing an outstanding selling job for scores of the country's leading manufacturers. Here are a few of our many clients: American Stove Company . . . Glidden Company . . . Barlow & Seelig Mfg. Co. . . . Conlon Ironer . . . Ruud Manufacturing Co. . . . Eagle-Picher Sales Co. Northern Indiana Public Service Co. and over 500 other Utility companies are using CAPEX Displays every month.

If you, too, are interested in these CAPEX Displays that lend even more sales appeal to your product, write today for full information. There is no obligation. We will welcome the opportunity to discuss your individual display problem with you.

Display Division of

THE CAPEX COMPANY
6433 RAVENSWOOD AVENUE, CHICAGO

These sketches illustrate the multitude of different designs and sales messages that can be prepared for you by CAPEX. Each one is prepared according to the individual merchandise display problem.

January Building

For the third month in succession the volume of public construction exceeded the total for the preceding month. Contracts for public projects awarded during January, 1938, were 5 per cent greater than December, 1937, and almost 8 per cent above the January, 1937, total, according to F. W. Dodge Corporation. Public construction for the current month amounted to $120,842,000.

Total construction contracts for both public and private work awarded during January in 37 eastern states, amounted to $195,472,000. This compares with $209,452,000 for December and $242,719,000 for January of last year.

By classes of construction, the January contract total amounted to $36,207,000 for residential building, $57,448,000 for non-residential building, $53,366,000 for public works, and $48,451,000 for public utilities.

In addition to the increase in public construction, the volume of contemplated new work, particularly in the residential group, has shown continued improvement during the past two months. For January, total contemplated construction for all classes amounted to $474,205,000 as compared with $359,365,000 for the preceding month and $412,680,700 for January of last year.

Wholesale Sales

Manufacturers' sales during December, 1937, fell off 18 per cent from December, 1936, according to reports from manufacturers cooperating in the monthly joint study of the National Assn. of Credit Men and the Bureau of Foreign and Domestic Commerce. Without adjustment for seasonal influences, December sales declined 10 per cent from November.

Mfgrs. Sales

The dollar volume of wholesale trade declined 12½ per cent during December as compared with December 1936 according to reports from 1,355 wholesalers cooperating in the monthly joint study of the National Assn. of Credit Men and the Bureau of Foreign and Domestic Commerce. Without adjustment for seasonal influences, December 1937 sales registered a decrease of 7 per cent from November.

The rate of collections on account receivable during December 1937 also fell off as compared with December 1936. Collections during December amounted to 67 per cent of outstandings on the first of the month. The corresponding ratio was 72 per cent for December 1936 and 61 per cent for November 1937.

Govt. Stoker Report

The U. S. Department of Commerce, Bureau of the Census has issued a report covering the sales of mechanical coal stokers from 1923 to and including 1937. The figures reported are not complete but are based on statistics from reporting manufacturers which reached a total of 108 companies in 1937. In that year the bureau estimated that there were 200 manufacturers of stokers in the United States and Canada.

The expansion of stoker sales is well illustrated by the figures released. The total sales of stokers for 1923 were reported as 1,464. From that year until 1930 sales remained rather constant, but in 1931 stoker sales were reported as 12,121; in 1933, 18,233; in 1935, 47,926; in 1936, 86,080; in 1937, 101,808. Total stoker sales since 1923 as listed in the report numbered 315,503 units.

Benefit Payments

Unemployment benefit checks totaling $150,387.48 were sent to 14,908 eligible unemployed workers in ten states during the first five days of benefit payments, the Social Security Board has announced. Telegraphic reports based on figures compiled by state unemployment compensation administrators covering the first five days of check distribution, through Friday, January 28, show the total number of workers who had thus far received their first benefit payment and the total amount of these payments.

Since these states require a "waiting period" of only two weeks, they are the first to make payments among the 22 states in which unemployment compensation laws went into full operation at the beginning of the year. In these ten states, the first "compensable" week of unemployment for those eligible workers who filed claims on January 3 was the week ending January 22, and checks began to be issued in many cases on the Monday following.

Metal Prices

(Prices as of Feb. 24, 1938)

New Metal Market—Domestic, strong; Foreign, strong.

Electrolytic copper—Delivered Middle West, $10.25-$10.55.

Lead—St. Louis, $4.35 cwt.; New York, $4.50-$4.55 cwt.

Ingot 5 lbs.—St. Louis, $4.85.

Zinc—St. Louis, $4.75 cwt.

Tin—New York, $42.25 cwt.

Brass Ingot—85/5/5/5, $10.00-$10.25, LCL Delivered.

Yellow Ingot — 68/1/2/29—$8.25-$8.50 LCL Delivered.

Scrap Metal (Dealers' Buying Prices) Strong

Composition and steam brass—$6.00 cwt.

Strictly Heavy Yellow Brass Scrap, Cast—$4.50 cwt.

Mixed, strictly cocks & faucets (including ball cocks, etc.)—$5.25 cwt.

Light brass, tubes, pipe, old sheets, etc.—$4.00 cwt.

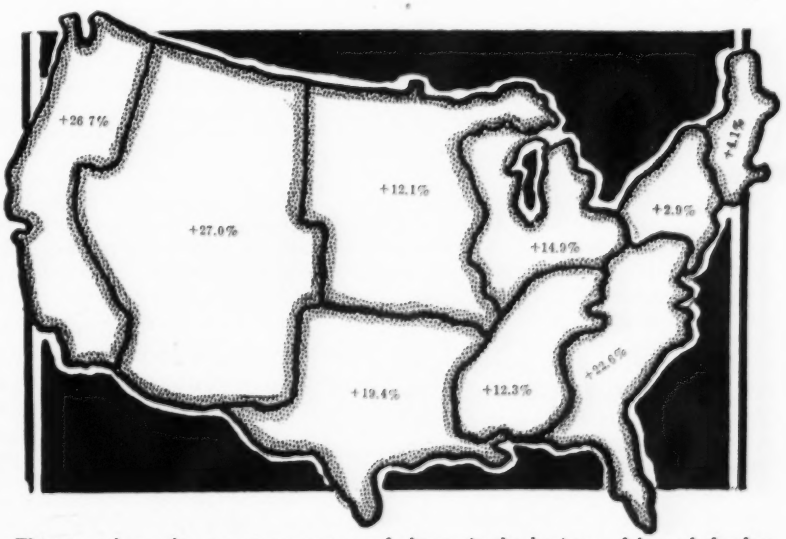
Old scrap lead pipe, etc—$3.75 cwt.

Copper sheating and roofing, free of nails—$6.00-$6.25 cwt.

Copper boiler tanks and other light materials—$6.50 cwt.

Soldered joints—Nominal, cwt.; fob Chicago.

Block tin—$34.00 cwt., fob Chicago.



This map shows the average percentage of change in the business of key wholesalers in each section of the country for January 1938, compared with January 1936

Supply

News of Men . . . **Meetings . . .** **Companies . . .**

C. S. A. Backs Housing

- *Letter to members calls attention to profit-possibilities in new FHA—Stresses present low prices as best sales argument—Emphasizes modernization features under revised Title I—Asks Salesmen to familiarize themselves with details of new Act*

One of the first supply groups to call its members' attention to the profit-possibilities in the new FHA was the Central Supply Assn. In a letter by W. E. McCollum, secretary, that organization stressed the modernization features in Title I of the amended Act.

The strongest sales point referred to for a tie-in with the housing program was the present low prices of plumbing and heating equipment. The fact was emphasized that these materials can now be sold for less money than in 1926.

Legislation Resume

Included with the letter was a short resume of the legislation. The letter follows in part:

"This new housing bill should be a great stimulant to building.

"Persons, particularly those with children, who have been living in apartments, will be interested in building a home where they can have a yard and flowers and trees.

"The average wholesaler and medium and small-sized contractors will not greatly benefit from mass building programs. It is to their interest to stimulate the building of homes and small apartment buildings and the modernizing of old homes.

"Title I of the National Housing Act, which was most helpful to our industry for three years, expired April 1, 1937. The new legislation restores Title I. The U. S. Department of Labor states that approximately 70 per cent of all plumbing and heating products sold in the year 1935 was for modernization.

"Modernization will help increase wholesaler and contractor sales until the new buildings get under way. Everyone in our industry should 'shout from the housetops' that the present

W. E. McCollum

prices of plumbing and heating products are moderate and that more and better plumbing and heating material can now be sold for less money than in 1926.

"Your executives and all your salesmen should familiarize themselves with the new Housing Act in order that they may explain it to their plumbing and heating contractor customers."

Dealer's School

One hundred dealers and their servicemen from various Iowa Counties were present at an air conditioning and oil burner school held January 27 by the Leighton Supply Co., Fort Dodge, Iowa.

The dealers were given a chance to completely assemble and take down burners under the direction of the school director.

Jobbers' Annual

The annual meeting of the Jobbers' Credit Assn., Inc., was held in New York City on January 25. The following were elected officers and directors for the coming year: Leo M. O'Neil, M. O'Neil Supply Co., Brooklyn, president; Michael Weinsier, Saltser & Weinsier, Inc., Brooklyn, first vice president; Elmer Doolittle, Central Plumbers Supply Co., Port Chester, N. Y., second vice president; Mortimer H. Smolka, E. Smolka Plumbing Supply Co., New York City, treasurer; and Glenn B. Van Buren, secretary.

Directors are: E. E. Basch, Regent Plbrs. Supply Co., Inc.; A. M. Behrer, Behrer-Nason Co., Inc.; Paul R. Berryman, Crane Co.; Elmer Doolittle, Central Plumbers Supply Co.; Milton M. Goldsmith, Sam S. Glauber, Inc.; Julius Klein, New York Plumbers' Specialties Co., Inc.; Frank Michael, Michael & Goldberg Plbg. & Htg. Supply Co., Inc.; E. J. Morris, Grinnel Co.; Leo M. O'Neil, M. O'Neil Supply Co., Inc.; T. W. Powers, Asco Supply Co., Inc.; Edward Schwartz, E. Schwartz Plbg. Supply Co., Inc.; Edward Sherman Supply Corp.; Raymond L. Smith, John Simmons Co.; Mortimer H. Smolka, E. Smolka Plbg. Supply Co.; Michael Weinsier, Saltser & Weinsier, Inc.

Exhibit at Fair

The American Radiator and Standard Sanitary Corp. has signed a contract for lease of an acre and a half of ground on which to erect a building in the "Community Interests" section of the New York World's Fair which will be held in 1939. The building will contain complete exhibits of fourteen affiliated companies relating to plumbing, heating and air conditioning equipment, prefabricated kitchen and bathroom units, vacuum cleaners, etc., according to a recent statement by Rolland J. Hamilton, treasurer and secretary of the corporation and president of the American Radiator Co.

Oil Advertising

The Chicago Oil Heat Committee under the chairmanship of Frank E. Spencer, has drawn up plans for a national cooperative advertising campaign to extend through a three-year period and cost $3,000,000. According to the plan, participants would be refiners manufacturing fuel oil used for tank wagon distribution, manufacturers of oil burners, and manufacturers of oil burner equipment and accessories.

Under the plan a national oil heat general committee, separate from any existing organization, would be formed to supervise the project. An executive committee would function under this general committee.

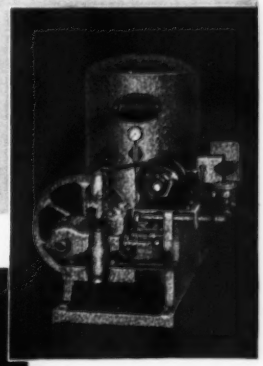
View of modern showroom of The Sterling Sanitary Supply Co., Cincinnati

Milwaukee Valve Meet

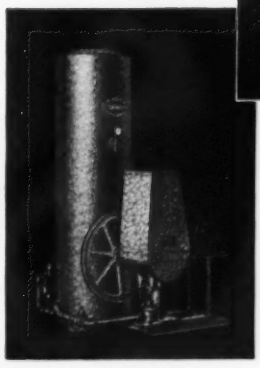
During the recent International Heating and Ventilating Exposition in New York City the Milwaukee Valve Company held its annual sales conference and banquet at the Commodore Hotel. New products were explained and there was discussion concerning possible additional product developments. Every representative in attendance was called upon for his ideas and plans to promote the mutual interests of the industry's customer and of the industry itself.

The conference was conducted by C. S. Bigelow, general sales manager. Those in attendance included: E. W. Allington, New York; H. F. Bente, New York; R. D. Bitzer, Philadelphia; Wm. G. Boales, Detroit; J. L. Bruns, New York; E. C. Caton, Cleveland, Ohio; T. C. Clapperton, Toronto, Canada; C. Clifford, New York; W. F. Dooley, Boston, Mass.; E. W. Felt, New Jersey; J. W. Gregory, Chicago; Ira Hodes, New York; R. W. Rassbach, Washington, D. C.; Wm. J. Schorr, Cincinnati, Ohio; R. H. Smith, Columbus, Ohio; Geo. Williams, New York.

Build CUSTOMER SATISFACTION



● The most important point of all in selecting a line of Electric Pumps is to be sure that they will please your customers. Not only when first installed but for years afterward. You can win the good will of your trade by recommending **Hoosiers.**



SELL HOOSIER ELECTRIC PUMPS AND COMPLETE WATER SYSTEMS

Hoosiers are a good profit line because they are of highest quality throughout, extra-sturdy and need less servicing. Built by specialists with more than 70 years of water supply experience. Nationally advertised and nationally respected. Write for free literature and dealer proposition.

FEATURES!

Complete line of fast selling models for DEEP or SHALLOW WELLS.

Protecting chamber prevents mixing of oil and water.

Galvazink inside and out—ends rusty water.

High grade, refrigeration type motors.

HOOSIER

FLINT & WALLING MFG. CO.

376 Oak Street, Kendallville, Ind.

American-Bosch Meet

Eastern salesmen of the water heater division of the United American Bosch Corporation attended a sales conference in Springfield, Mass., January 24-26. The new 1938 line of merchandise was presented, and discussions of advertising, sales and engineering plans of the company followed. Models were exhibited in actual working condition in the display rooms of the organization and features were explained.

Decatur Meeting

The annual meeting of The Decatur Pump Company was held at the company's offices in Decatur, Ill., January 28. A. W. Burks was re-elected president and Roy C. Coberly, who has been serving as assistant sales manager, was elected treasurer. B. G. Duer was named secretary, replacing Joseph F. Gauger, who was elevated to the post of vice-president.

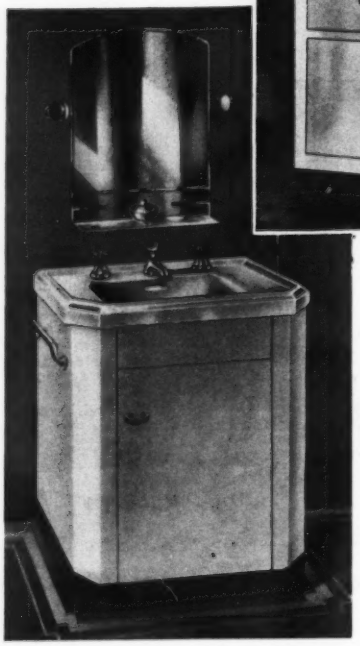
At the January 28 meeting of the Eastern Supply Assn. in New York City: Leo O'Neil, president of L. M. O'Neil Co., Brooklyn, N. Y., and new president of the Jobbers' Credit Assn.; Phil Flaherty, vice-president, Somerville Iron Works, Somerville, N. J.; J. J. Crotty, vice-president of Central Foundry Co., New York City

A. G. A. E. M. Plans

Plans for a nationwide promotional campaign aimed at increasing the sale of gas ranges were reviewed at a special meeting of the domestic gas range division of the Association of Gas Appliance and Equipment Manufacturers which was held February 28, in New York at the Waldorf-Astoria. W. E. Derwent, chairman of the division and vice president of the George D. Roper Corporation, of Rockford, Ill., presided.

It was reported that executives of leading manufacturers of the gas range industry attended and that there was considerable interest in the sales stimulating plans as a result of the recent passage of the Federal Housing Act. C. W. Berghorn, executive director of the Assn. of Gas Appliance and Equipment Manufacturers, recently stated that the gas appliance and equipment industry was hopeful of "a new impetus and a substantial reduction of unemployment in many fields" because of the legislation to spur home-building.

THE DISTINCTIVE ENAMELED WARE FOR THE DISCRIMINATING CUSTOMER



The **WAKEFIELD**

If left hand drainboard is desired, specify D-744-K.
If right hand, specify D-745-K.

The **COLONA**

For combination supply and pop-up waste fitting, specify D-3576. For center set combination supply and pop-up waste fitting, specify D-3578.

REFLECTING *Good Taste* IN KITCHEN AND BATH

NOTHING about the home reflects good taste quite as much as do attractive plumbing fixtures. Nothing reflects more favorably on the reputation of the plumbing contractor who installs them. In the two new *United States* fixtures pictured at the left you'll find the degree of attractiveness essential to good taste. But, as you'll observe, they offer *more*. By means of their unusually roomy cabinet compartments, they offer the householder practical utility not provided by conventional fixtures. Display the WAKEFIELD and the COLONA on your floor or in your window. Their eye-appeal will go a long way toward *selling* them.

United States Sanitary Mfg. Co.
GENERAL OFFICES: PITTSBURGH, PA.

Water Heater Meet

Predicting a banner year for electric water heating, seventeen Hotpoint Water Heater executives from all parts of the country attended a three day conference in the Little Theatre of the Edison General Electric Appliance Company, Inc., Chicago, January 31 to February 2. August Jaeger, sales manager of the division, presided.

Speakers on the program, in addition to Mr. Jaeger, included R. W. Turnbull, vice-president and general sales manager; Charles Moreland, Gene Vinet, sales division, J. C. Sharp, chief engineer, Mrs. Mary Lowell Schwin, manager, home economics division, Clinton Brown, sales campaign manager and L. J. Sholty.

Monmouth Opening

The Monmouth Plumbing Supply Co., West Palm Beach, Fla., has announced the opening of a new plant at Narcissus and First Sts. in that city. On February 26 an open house and inspection was held and refreshments served.

The building is entirely new and all appointments are of the most modern type. Charles Rosencrans is president of the company and Wm. M. Fry, secretary. Grant Brooker is branch manager.

Heat Movie

At their recent meeting the Engineering Society of Buffalo presented the Johns-Manville motion picture, "Heat and Its Control." Supplementary talks and answers to questions were given by Marshall H. Jackson, R. T. O'Brien and G. T. Parker.

Penn Opens Branch

D. A. Coon, formerly sales engineer of the New York branch of Penn Electric Switch Co., Goshen, Indiana, has

D. A. Coon

been placed in charge of a new branch office which has been opened at 4503 N. Broad St., Philadelphia, Pa. Mr. Coon has had a great deal of experience in the sale and application of general heating accessories. All sales and service activities in the Philadelphia territory will be handled from the new office, according to R. H. Luscombe, sales manager.

Brown Elected

E. E. Brown, secretary of the Chicago Faucet Company, was elected president of the North West Manufacturers' Assn. at the recent annual meeting. This association is composed of 38 manufacturing firms of the northwest section of Chicago. Several manufacturers well known to the plumbing and heating industry are members of the association.

Fairbanks-MorseBldg.

Fairbanks, Morse & Co. has recently moved into its new general offices in the modernized Fairbanks-Morse Bldg., 600 S. Michigan Ave., Chicago. The new quarters have been completely remodeled and the addition of a new facade has brought the exterior into harmony with the new interior decorations.

Housing Metal

The American Iron and Sheet Institute has published a report showing the amount of steel used in construction of a typical small dwelling costing $4,000. In such a house the survey estimates 4,250 pounds of cast iron is used in plumbing lines, bath tubs, wash basins, radiators, steam boilers, kitchen sinks, laundry tubs, etc.

Reif-Rexoil N. Y. Meet

More than 200 dealers attended the regional meet of Reif-Rexoil, Inc., which was held in New York City recently. A highlight of the evening was the announcement of the company's pre-convention sales contest winner.

Guests at the meeting included: Willis A. Ensign, vice president, Harter-Rexoil Distributors, Inc.; Edwin R. Cooney, president, Cooney Refrigerator Co.; Charles Murdock, Kaustine Co.; George O. Miller president, Oilburner Sales & Service Co.; Harry J. Schwindt, vice president and treasurer, Harter-Rexoil Distributors, Inc.

Officers at the speakers' table were: Allan F. Reif, president; Chas. A. Reif, secretary; Willard Rich, vice president.

Those in attendance at the Reif-Rexoil meeting in New York City during the Fifth International Heating and Ventilating Exposition

Spinney Open House

Over 2,000 people recently attended a one day opening of the new premises of E. K. Spinney, Ltd., plumbing, heating and sheet metal fixtures and supply dealers, Yarmouth, Nova Scotia. The Canadian Government and eastern provinces sent representatives and all were welcomed by Mr. Spinney during the open house.

Wood Meeting

The John Wood Mfg. Co., Conshohocken, Pa., held a meeting in the Mott Co. of Pennsylvania office in Camden, N. J., February 14 that was attended by contractor-dealers of Camden and Camden County, as well as by master plumbers from other counties.

Arthur Sutcliff explained his company's products in detail, spending considerable time on the subject of water heaters. Ed. Hurley, sales manager, told the group that from now on all parts of the company's water heaters will be carried in stock by wholesalers. This should result in time saved in securing parts, he said.

M. F. Piersol, Philadelphia sales manager, also spoke. Following the salesmeeting refreshments were served to over 100.

N. E. Banquet

Among the guests attending the banquet of the N. E. Wholesalers, Inc., held in the Hotel Kenmore, Boston, Mass., recently were the following

R. C. Sullivan

guests: R. H. Gordon, A. M. Byers Co.; William Pinkham, Malleable Iron Fittings Co.; E. P. Corey, Youngstown Sheet & Tube Co.; William McKee, Grinnell Co.; A. H. Duforte, Central Tube Co.; James Dwyer, Crane Co.; Max Rose, vice president, American Radiator Co.; H. J. Sonaborn, Republic Steel Co. They were introduced by R. C. Sullivan, newly elected president.

Air Hygiene

At the annual business meeting of the Air Hygiene Foundation in Mellon Institute, Pittsburgh, February 8, fifteen representatives of industry, science and government were elected to the board of trustees. This non-profit, cooperative organization is for the purpose of industrial health.

Members of the board of trustees, all of whom were re-elected, include: Vandiver Brown, general attorney, Johns-Manville Corporation, New York City; Joseph Dilworth, assistant to president, Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.; Andrew Fletcher, vice president, St. Joseph Lead Co., New York City.

New Radio Series

Harvey-Whipple, Inc., Springfield, Mass., has announced that its radio time on oil burners has been doubled and now includes a fifteen minute broadcast period each week over four chain stations. The new program which starts March 22, will be heard Tuesdays over the NBC-Blue net work. Dealers are being tied-in on the program through a system of cards which are mailed in advance to prospects in the area of each radio station.

Send for this new catalogue on the complete line of insulations for the plumbing and heating trade

backed by a name known to millions

. . . JOHNS-MANVILLE

(*left*) J-M Pre-Shrunk Wool Felt. Furnished either with canvas or with a handsome aluminum finish that ends pasting, saves ⅓ in application labor.

J-M Pre-Shrunk Asbestocel supplied in three finishes: regular canvas, high-speed asbestos paper and high-speed de luxe aluminum.

J-M 85% Magnesia. Highest insulating value. Neat appearance. Permanent. Costs more, but worth more. And a handsome profit for you.

J-M Asbestocel Range Boiler Jacket saves enough fuel in a few months to pay for itself. A sales story that lands many an extra $6 to $8 job.

HERE'S THE LATEST Johns-Manville Catalogue on plumbing and heating insulation materials for every type of new construction or modernization work. These products save money for home owners and give you an extra profit every time they are used. They are easily sold . . . easily applied at low labor costs . . . and they *stay* installed. Ask your J-M Supply House or write Johns-Manville, 22 East 40th Street, N.Y.C.

Adams Moves

Adams Engineering Co., Chicago, has moved its general offices from 2607 S. Wentworth Ave. to 230 E. Ohio St., according to a recent announcement. The engineering laboratories are now being moved to the new location.

The new offices, completely modernized, are spacious, comprising over 2,500 sq. ft. of floor space. An open-house is planned for the near future.

Callaghan Elected

Thomas A. Callaghan, who for the past fifteen years has been vice president and general manager of the Federal Pipe and Supply Co., Chicago, was elected president at a meeting of the board of directors recently. He succeeds the late George H. Mason.

Ray Cronin, for several years head of the engineering department, was elected vice president. William J. Flaherty is secretary and treasurer.

The most recent addition to the company's plant was completed within the past year.

Insulation Meet

The annual meeting of the Asbestos Contractors New England Association was held recently at the Bradford Hotel in Boston. After the business meeting, during which George W. Hinman of the Hinman Asbestos Corporation was elected president and Harold B. Buse, former insulation contractor was elected secretary, a dinner was held for the guests.

At the dinner the speakers included the new president, Ernest A. Johnson, secretary of the Boston Building Trades Council, and Walter H. Oleson, manager of the Heating, Piping and Air Conditioning Contractors Boston Assn.

Coal Dinner

With an attendance of more than 600, the Anthracite Club of New York held its eighth annual banquet at the Hotel Astor, January 20.

The principal event of the program was an address by Rev. Dr. Allen D. Stockdale, chairman of the speakers' bureau of the National Association of Manufacturers.

Some of those present at the annual banquet of the Anthracite Club of New York at the Hotel Astor

Personals

George Klopp has been made sales manager of the Anchor Stove and Range Co., New Albany, Ind., according to a recent announcement.

Bill Scully has been added to the sales department of Harvey-Whipple, Inc., Springfield, Mass., it was announced recently by Ray G. Whipple, treasurer. Mr. Scully has been associated with the industry in engineering and sales capacities for 25 years.

Charles R. Hook, president of the American Rolling Mill Company, was elected president of the National Assn. of Manufacturers at the initial meeting of the association's new board of directors in New York City recently.

William W. Stickles has become associated with the Cowan Sales Company, New York City. For many years Mr. Stickles has called on the plumbing supply jobbers throughout New Jersey and he will continue to operate in that area.

C. T. Burg, general sales manager of Iron Fireman Mfg. Co., has been elected a member of the board of directors of that company.

D. G. McLeod, for the past ten years sales manager of the Murray W. Sales & Company, Detroit, Mich., has been made vice-president and general manager of sales for that company.

Frank E. Monnin, president of the New York State Retail Solid Fuel Merchants Assn., has been elected to the advisory committee of Anthracite Industries, Inc., according to announcement made by F. W. Earnest, Jr., president.

Ralph E. Nolan has joined the water heater division of the United American Bosch Corporation, Springfield, Mass.,

R. E. Nolan

according to a recent announcement. Mr. Nolan is a native of Atlanta, Ga., and will make his headquarters there.

W. W. Vosper, one of the original founders of the Toledo Pipe Threading Machine Co., Toledo, Ohio, has been elected president of the company to succeed the late W. W. Collins.

Andrew H. Siph has been appointed field salesman by the Walker Manufacturing and Sales Corporation, St. Joseph, Mo.

Prof. William N. Barnard has been named director of the Sibley School of Mechanical Engineering in the college of engineering by the Cornell University board of trustees.

R. W. Lewis has been appointed manager of the dealer line sales division of Fairbanks, Morse & Co., Chicago, according to a recent announcement by

R. W. Lewis

A. C. Dodge, vice-president and sales manager. Mr. Lewis has been associated with the company since 1926.

New Distributors

Sales Representatives, Appointments

L. E. Pelletier has been appointed general sales manager of W. A. Russell & Co., New York City. He has been associated with that organization in the capacity of assistant sales manager since 1935.

Burnham Boiler Corporation, Irvington, N. Y., has appointed Warren Doble, 220 Bush St., San Francisco, and Southern California Engineering Co., 174 South Western Ave., Los Angeles, as representatives for the state of California.

Standard Sanitary Mfg. Co. has announced the appointment of E. A. Rollor as manager of the Dallas, Texas, branch. He has been serving as acting manager of the branch.

The Peerless Mfg. Co., Louisville, Ky., has appointed F. R. Kimmel manager of the stoker division, it was announced recently.

Harvey-Whipple, Inc., has announced the appointment of J. W. Harrold as factory representative for Michigan,

J. W. Harrold

northern Ohio and northern Indiana, according to a recent announcement by Ray G. Whipple, treasurer.

The Mercoid Corp., Chicago has announced the promotion of William Kerber to superintendent. Associated with the company since 1923, Mr. Kerber laid out the present plant in Chicago.

The Kohler Co. of Kohler, Wis. has announced that Harry C. Schrader, formerly manager of the Kansas City branch has been appointed manager of the Chicago branch with headquarters in the Tribune Tower. Mr. Schrader succeeds John M. Kohler whose duties as treasurer of the company will be carried on at the home office. Succeeding Mr. Schrader as manager of the Kansas City branch is D. A. Hawk, formerly a plumbing and heating salesman for Kohler Co. in that territory.

Anderson Products, Inc., has appointed R. D. Bitzer Co., 3109 N. Broad St., Philadelphia, as distributors for their products in eastern Pennsylvania, southern New Jersey and the entire state of Delaware.

Business Changes and New Incorporations

Black & Decker Mfg. Co., Towson, Md., has announced the opening of a factory branch at 630 Bronne St., New Orleans, La.

Niagara Machine & Tool Works, Buffalo, N. Y., has announced the opening of a new factory branch office in the Leader Bldg., Cleveland, Ohio. J. K. FitzGerald will be the district sales manager.

Lincoln Electric Company, Cleveland, Ohio, has announced the opening of a new sales office in Phoenix, Arizona, in charge of R. J. Reardon.

BRIDGEPORT COPPER WATER TUBE MEANS

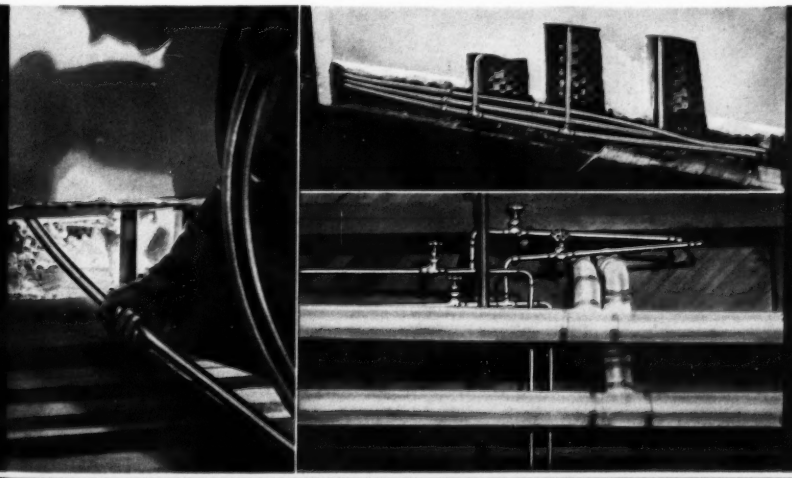
LOWER COST... LESS TROUBLE ...MORE PROFIT

Homeowners and building managers everywhere dread the job of replacing rusted, useless piping. You can make them readier to let you undertake the job when you show them how Bridgeport Copper Water Tube not only greatly reduces the cost and inconvenience usually associated with this work, but also gives them permanently rust-free piping at the approximate cost of rustable piping!

Bridgeport Copper Water Tube also comes in the flexible Pancake Coil form. Because it can be run between partitions and under floors, it eliminates much of the ripping and tearing away of walls, ceilings, baseboards and plaster. Consequently, the redecorating costs are greatly reduced. Because it can be bent to avoid obstructions, few fittings are necessary—a further saving in time and trouble. In most cases the old piping need not even be removed because the copper tube is small enough in diameter so that it can be installed right alongside.

These advantages apply in the installation or renovation of plumbing, steam and hot water heating lines. Copper Tube is also being used more and more for underground water service, industrial piping, oil burner and air-conditioning equipment and a variety of other installations where long life, trouble-free service and low cost operation are of prime importance.

Bridgeport Copper Water Tube is made from 99.9% pure copper in strict accordance with A.S.T.M. and U. S. Government specifications, and is designed for use with compression and solder type fittings. For further information, write for the Bridgeport Copper Water Tube Booklet.



Upper—Removal of the baseboard and three breaks in the plaster only were required in repiping a six-room house with Bridgeport Copper Water Tube.

Lower—For exposed work, Bridgeport Hard Copper Tube, with solder type fittings, is recommended. It is more rigid and requires a minimum number of hangers and supports.

Left—No need to tear out walls and floors. Tube can be "fished" through with minimum property damage.

BRIDGEPORT BRASS

BRIDGEPORT BRASS COMPANY, BRIDGEPORT, CONN. ESTABLISHED 1865

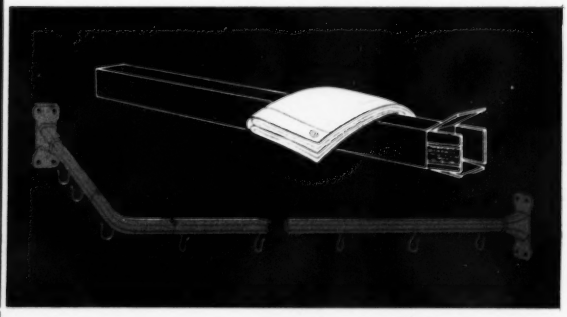
"Bridgeport"

Compare

The Modernization Advantages of BRIDGEPORT'S PLUMBERS' BRASS GOODS

WHEN you are out for bigger, more profitable modernization jobs, consider the advantages of Bridgeport's line of Plumbers' Brass Goods. It is a complete line, ideally *designed for modernization*. Every item is built to meet the most modern engineering and architectural requirements. Every item is more durable and attractive than ever before. No effort or expense has been spared to make it the most business-building, profit-making line on the market. Compare the advantages of this line with similar items in other lines and *use them* to get new business and give your customers *lasting* satisfaction.

TRAXROD—for modernizing bathrooms and clothes closets in homes, hotels and apartments. New and smart with an extra degree of strength and trimness. Shower curtains can be installed or removed in fraction of former time. Hooks run on a concealed track—can't come loose and be lost. No loops or rings to slide across and mar finish. Snap-lock connectors and ceiling supports make curved rods sturdy and easy to install.



WASTE AND OVERFLOW

Patented head adjustable to any tub slant makes it ideal for modernizing tub fixtures. The length is extra generous to allow for ample adjustment. Bead stopper chain permanently attached to strainer. Designed to eliminate clogging.

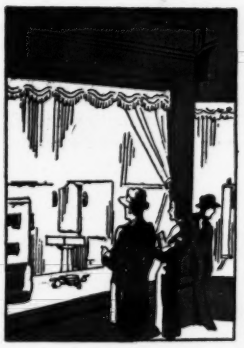
BASKET TYPE SINK STRAINERS

for modernizing sinks with 2½" and 3½" to 4" openings. A sure seller. Crumb basket largest on the market. Handles at top allow removal without touching waste matter. A flip of the finger and the basket acts as drain or stopper. Easy to install. Low in price.

BRIDGEPORT BRASS

Established 1865

BRIDGEPORT BRASS COMPANY • BRIDGEPORT, CONN.



Trade

News of . . . Men . . . Associations . . . Events . . .

Ohio Convention

- *Over 400 attend convention of Ohio Assn. of Master Plumbers in Cleveland last month—Dayton sticker ordinance is discussed—Creviston talks on merchandising—N. S. Larson elected president*

Four hundred and twenty-four delegates and visitors attended the forty-seventh annual convention of the Ohio State Assn. of Master Plumbers in Cleveland, February 7 to 9.

The following were elected to office for the coming year: William W. Gesling, president; N. S. Larson, Toledo, vice president; H. W. Eckhardt, re-elected secretary and treasurer. Delegates chosen for the national convention were Edward Frank, Cincinnati, and retiring Pres. Harry M. Wormley; N. S. Larson and Henry S. Saunders were named alternates.

Edward D. Maurer, president of the Cleveland association, was general chairman of the convention.

A theater party Monday night, a night club and floor show Tuesday night, and a banquet on Wednesday evening that drew over 500 people after the meetings had closed, comprised the week's social program.

Sticker Ordinance

An important subject of discussion at the business sessions was the Dayton "sticker" ordinance. Henry S. Blank, past state president, explained the effective results obtained by enforcement of the ordinance during the time it was in operation.

According to Mr. Blank, notwithstanding a strict plumbing code and live, aggressive plumbing inspectors, the Dayton Master Plumbers discovered that over three hundred "bootleg" installations were made during the year of the "Sticker" ordinance enforcement. Through tracing the destination of fixtures bought, from the stubs of the stickers that the ordinance required sources of supply to furnish, these bootleg installations were found by the plumbing inspectors and the purchasers required to have the work properly installed and inspected. Not

W. W. Gesling

all of the violations have yet been contacted, there being enough investigation work for the inspectors to last for several months.

Mr. Blank brought out the fact that few of the members of the Dayton association profited from this work, as the buyer usually hired one of the smaller non-member master plumbers to install the work.

City Appeals Case

At the time the sticker ordinance was declared void by the Court of Appeals of Montgomery County, the Dayton association was making plans to protect these buyers and installers of plumbing against overcharges for making this work conform to the plumbing code.

Mr. Blank announced that the City of Dayton was appealing the case to the Supreme Court of Ohio, and the state association as well as several local associations were asked to stand by in case help was needed.

Howard E. Ellis, chairman of the state apprenticeship committee, submitted a detailed report of the work of his committee and stressed the necessity of greater training of more apprentices. The report also recommended that apprentices be trained in salesmanship, business management and engineering service in conformity with the apprenticeship plan of the national association in preparation for the time when these apprentices may become competitors. The time to instill proper estimating, business methods and ethics in the minds of these future competitors is during their introduction to, and instruction in the plumbing business as apprentices, it was pointed out.

Thomas F. Moran, representative of the Federal Committee of Apprentice Training, explained the work of his committee and expanded upon the subjects discussed by Mr. Ellis.

Russell G. Creviston, director of advertising and sales promotion of Crane Co., talked on "Merchandising of Plumbing and Heating Materials." Much of his talk was given from the viewpoint of the entire construction industry. He pointed out that markets are people and, therefore, change with changing habits and customs which grow out of economic and social developments.

Bldg. Is Barometer

The speaker reviewed the history of the building market, pointing out that construction is, in many respects, a barometer of national progress. He stated that there are only two outstanding expansion factors today—increase in population and electrification. Estimates of huge national needs in the housing field do not mean much when buying power is disregarded.

Excerpts from Mr. Creviston's talk follow:

"Rural electrification is adding large potentials to the market for capital goods. In the field of plumbing and heating the farm market holds great promise as experience shows that once farm homes are electrified, water systems and plumbing systems are added to over 60 per cent of the homes. . . .

"The importance of price in the sale of the finished product (and in the building industry that means the completed structure) was demonstrated by the wave of high price propaganda which started last year and is still present to too great a degree. Unfortunately the building industry was not in a position, due to the lack of a national voice, to combat such propaganda, much of which was an overstatement of the fact and some of which was based upon a misunderstanding of the facts. Because of the importance of the price of the finished product we must interest ourselves in such important questions as taxation, building finance, etc. Our tax structure for the most part goes back to the day when practically all wealth was invested in real estate and even today, while the income from real estate is only 25 per cent of the national income, the tax on real estate provides approximately 85 per cent of state and local taxes and 60 per cent of all taxes.

Contractor Is Expert

"In the field of modernization the tendency of the buyer is to want complete units such as the scientifically planned kitchen, the basement with its game room and modern laundry, and the bathroom with its complete color harmony and fixture ensemble. The purchaser of mechanical equipment also regards the seller as an expert. As plumbing and heating contractors, you therefore occupy the position of an expert in the eyes of your customers. But the degree to which that relationship can be maintained and enlarged depends upon your using quality materials, doing good work, and maintaining a permanent interest in the welfare of your customers.

H. S. Blank

"Maintaining regular contact with customers is one of the most economical and effective methods of promoting business. Through every customer you should be able to reach at least three prospective customers and by keeping a simple but accurate set of records you can direct your promotional efforts on products which they need.

"In conclusion, I wish to emphasize that you should gradually add allied lines to the end that you will be recognized as a source of supply for all types of plumbing and heating services. The time has come to discard the idea that you are strictly contractors, unless you desire to follow contract work exclusively. . . ."

R. W. Lang, president of the Ohio Wholesale Plumbing and Heating Industry, extended greetings from his association and declared that the established method of distribution is still the most practical and effective method. He said that conditions necessitate strong, aggressive organization and intelligent, constructive planning. He stated that the main problem today is not one of manufacture, but one of selling and distribution.

Mr. Lang advised his audience to watch costs and to strive to improve methods of doing business. He described the unwise extension of credit upon the part of manufacturers, wholesalers and retailers as an evil needing correction.

In closing, the speaker advised contractor-dealers to make a careful study of the new housing act and its possibilities for developing sales, suggesting that they begin at once to do promotional work.

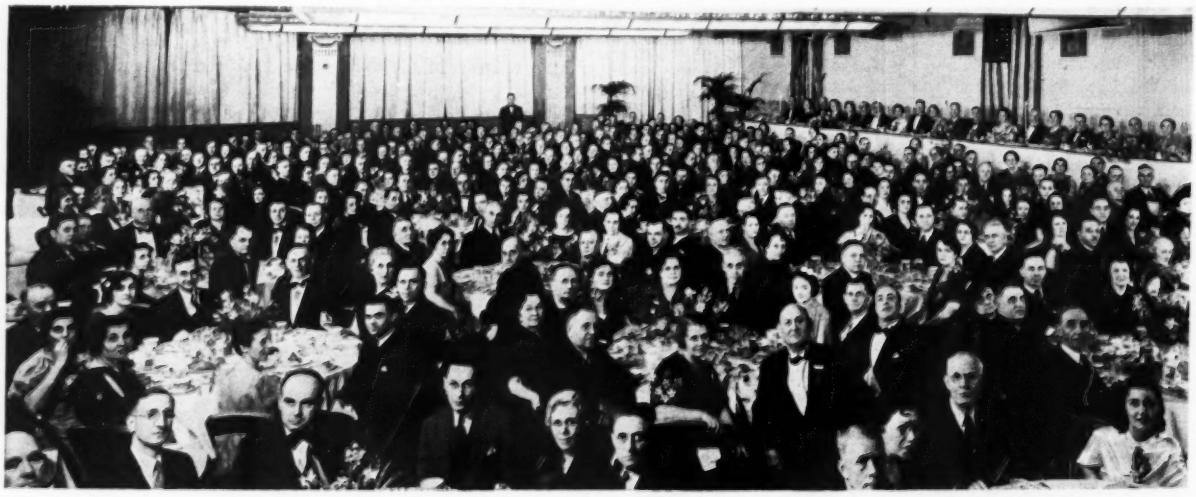
Sanitation Law

The Whitehead Metal Products Co. showed a film of kitchen units, and representatives explained the company's policies.

Dr. Walter H. Hartung, director of the state board of health, gave an interesting report of the work of his department and also covered the subject of securing enactment and enforcement of sanitary laws, particularly recommended that the association lend its prestige and resources in securing better sanitary conditions in small towns and rural sections.

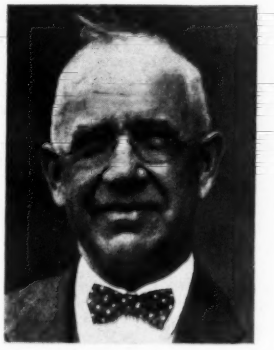
Wm. C. Groeninger's address upon "Plumbing Progress" covered the subject from the beginning of his efforts to secure proper sanitary laws to the

View at the annual banquet following the Ohio Master Plumbers Assn. convention in Cleveland



present and he warned his listeners that the job was not yet completed.

Walter E. Eynon, a member of the



Ed. Frank

national board of directors, reported upon the activities of the national association.

Past National Pres. Ed Klein introduced the past state presidents present at the convention, announcing that he believed the present convention established a record in having fourteen past presidents present.

Sec. and Treas. H. W. Eckhardt's report showed the association in sound condition, both numerically and financially, with a paid up membership to June, 1938, of 451. He also announced that a new local association had been formed in Galion, Ohio, and that he had received membership dues from six members from this new local during the convention.

President Wormley made a complete and comprehensive report of the work of his office and of the state association during the past year and made several recommendations.

Resolutions Passed

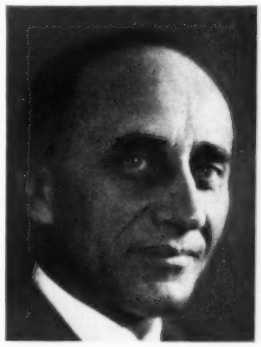
The following were among the resolutions adopted by the convention:

That the incoming board of directors and the president appoint a legislative committee to develop constructive legislation for the protection of the public health and the best interests of the industry, as well as to carefully scrutinize pending or existing legislation affecting the industry. This resolution was amended and passed, the amendment providing for enlargement of the present sanitary committee which had been working on similar matters, to be known as the sanitary and legislative committee.

That this committee prepare a bill for the examination and licensing of all journeymen and master plumbers was referred to the incoming directors.

That the sanitary and legislative committee and the state association cooperate with small towns and counties in securing passage and enforcement of plumbing codes.

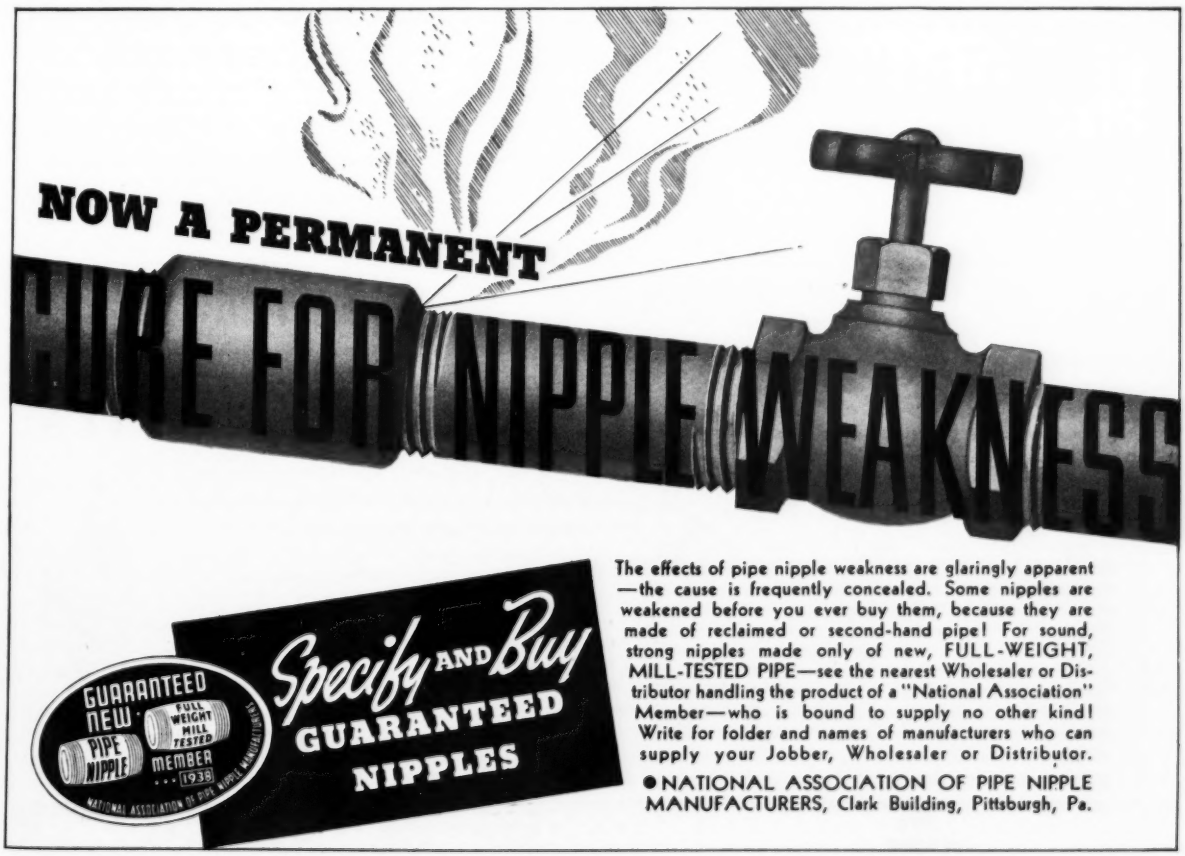
That the incoming board of directors study the classification under which the plumbing industry is placed for



H. Wormley

state compensation insurance which lists the industry in one of the most hazardous groups; and seek to secure a more equitable classification.

That the state plumbing inspector be included under civil service, the same as his assistant inspectors.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CURE FOR NIPPLE WEAKNESS
GUARANTEED NEW PIPE NIPPLE
FULL WEIGHT MILL TESTED
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Specify AND Buy
GUARANTEED NIPPLES
The effects of pipe nipple weakness are glaringly apparent—the cause is frequently concealed. Some nipples are weakened before you ever buy them, because they are made of reclaimed or second-hand pipe! For sound, strong nipples made only of new, FULL-WEIGHT, MILL-TESTED PIPE—see the nearest Wholesaler or Distributor handling the product of a "National Association" Member—who is bound to supply no other kind! Write for folder and names of manufacturers who can supply your Jobber, Wholesaler or Distributor.
● NATIONAL ASSOCIATION OF PIPE NIPPLE MANUFACTURERS, Clark Building, Pittsburgh, Pa.

Apprenticeship

• *N.A.M.P. approves manual for establishing local plumbing apprenticeship standards*

A manual of procedure for establishing local joint plumbing apprenticeship standards has just been released by the Federal Committee on Apprentice Training. It is approved by the N.A M.P. and the United Assn. of Journeymen Plumbers and Steam Fitters. A model set of local standards is included in the booklet.

The aim, of course, is to help make future journeymen uniformly competent in every section of the country. The following steps are described: forming the local joint plumbing apprenticeship committee; determining local standards by the committee; arranging terms and conditions for employment and development of future apprentices; placing young men now employed under apprentice agreements.

In adopting the national standards, it is pointed out, the local joint plumbing apprenticeship committee will have to include additional standards to meet the conditions peculiar to the locality. It should be emphasized, however, that the national standards have been formulated as a minimum, and that local standards should not be built on a lower basis.

Following is a condensed version of the manual:

The local master plumbers association and the journeymen plumbers' local union should study and endorse the national standards. Their next step is to appoint their representatives in equal numbers as members of the local joint apprenticeship committee, to serve without pay.

Other Groups Aid

The local committee may request other groups to appoint representatives to act as consultants. The following can be helpful: the plumbers' license board; the plumbing inspection department; the vocational education department of the public schools; the employment service (National Youth Administration, etc.).

After local plumbing apprenticeship standards have been worked out and approved by the committee, they should be submitted to the local association, to the journeymen, and to the state apprenticeship council. Revisions should be approved by all parties.

The employer and employe organizations sponsoring the local standards should agree upon a method of selecting applicants for apprenticeship. When putting local standards into operation, the young men now working in the trade should be given the opportunity to secure the benefits of apprenticeship.

State Cooperation

The local committee should cooperate wherever possible with the state apprenticeship council in the following ways: submit the names of members of the local committee for approval; present the local standards for review; incorporate in its own standards the right of appeal to the state council from any decision of the local committee; furnish the state council a copy of each apprentice agreement; notify the state council of recommended cancellations of agreements; notify the council of each apprentice's completion of his apprenticeship period, with satisfactory evidence of competence, in order that the state council may issue a certificate of journeymanship to such apprentice.

The public school authorities are responsible for the administration and supervision of related and supplemen-

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The unseen dangers of excessive temperature, pressure and vacuum threaten the lives and property of your customers daily. More and more they are becoming convinced that dependable protection against these public enemies is an absolute necessity for their well being. Consequently, they look to you, as a heating expert, for your recommendations. Cash in on these live prospects by suggesting CADWELL Heating Specialties with their many protective advantages.

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(left) NO. 45 UNIT FOR HOT WATER HEATING SYSTEMS. A unit complete in itself which is easily and quickly installed. Guaranteed to protect the boiler against increase of pressure above relief setting, keeps system balanced with water and controls expansion pressure. Relief and pressure governing feature is devoid of springs, governed entirely by physical laws, responsive to slightest pressure differences and test itself automatically. It cannot increase setting at any time.

(right) NO. 35 PRESSURE AND VACUUM RELIEF VALVE. A diaphragm type of valve for use on range boilers or storage tanks where a temperature relief valve is not necessary. Operates by internal pressure. Tested or cleaned by simply pressing cap at top.

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(left) NO. 75 PRESSURE AND TEMPERATURE RELIEF VALVE. This is a competitive type of relief valve, of the fusible plug type. Does not include self-closing feature.

(right) NO. 25 TEMPERATURE PRESSURE RELIEF VALVE. A self-closing diaphragm type relief valve for use on range boilers and storage tanks. Has only one seat which is governed by internal pressure. Highly endorsed by public safety officials.

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tal school instruction for apprentices. The local committee should keep informed on the extent to which the school officials can fulfill this function. Where no local facilities exist for supplying the related school instruction, the committee should turn to its state director of vocational education for assistance.

An annual conference is useful to stimulate apprenticeship and to consider methods for improving standards. At these conferences, certificates of journeymanship could be awarded to apprentices by the state council.

The Local Standards

Principal sections of the typical local apprenticeship standards follow:

A "plumber apprentice" is a person who begins his apprenticeship between the ages of 16 and 21 who, as his principal occupation is engaged in learning to install and assisting in the installation of plumbing and drainage. and who has entered into a written agreement with an employer which provides for at least 9,500 hours of reasonably continuous employment.

Applicants should if possible be high school graduates or the equivalent, although exceptions can be made.

The term of apprenticeship shall not be less than five years. Related school instruction should supplement the hours of employment as a minimum requirement.

All apprentices employed shall be subject to a try-out or probationary period not exceeding 500 hours of employment. During this period, annulment of the agreement will be made by the joint plumbing apprenticeship committee upon request of either party.

M. P. Responsible

During the first three years, the apprentice will be given opportunity to assist in installing such plumbing material as his skill will permit, under the supervision of a journeyman. During the fourth and fifth years the apprentice may make plumbing installations consisting of installing piping, setting plumbing fixtures and appliances, and may do such other work as his acquired skill will permit. All such work done by apprentices shall conform in every respect with the requirements prescribed in the state plumbing code or local ordinances. The master plumber in charge of such plumbing installations shall be responsible.

Each apprentice shall enroll and attend classes not fewer than four hours weekly for a minimum of 720 hours (school instruction). It is recommended that courses for plumbing apprentices be limited to those who are actually apprenticed in the plumbing trade.

Apprentices shall be paid at the following percentages of the rate paid journeymen: first period of six months —25 per cent; second period—30 per cent; third period—35 per cent; fourth period—40 per cent; fifth period—45 per cent; sixth period—50 per cent; seventh period—57½ per cent; eighth period—65 per cent; ninth period—72½ per cent; tenth period—80 per cent.

An examination of apprentices shall be given before each period of advancement and at such times as may be determined by the joint plumbing apprentice committee. In these examinations consideration shall be given to the school attendance, progress, and daily employment record.

C. P. Ingram, N.A.M.P.
apprentice chairman

It shall be the duty and responsibility of the joint committee to provide, insofar as possible, continuous employment for all apprentices. This may necessitate the transfer of apprentices from one employer to another.

In case of dissatisfaction between the employer and the apprentice, either has the right and privilege of appealing to the joint plumbing apprenticeship committee for such action and the adjustment of such matters as come within these standards.

Exams Required

No apprentice shall be granted a certificate of journeymanship until he has passed such examination as the committee may require, and has received a journeyman's license.

Every shop which employs one or more journeymen steadily may have one apprentice and one additional apprentice for every five journeymen steadily employed, up to 20; but in no case shall any shop be entitled to more than four apprentices.

These standards may be modified at any time by action of the joint plumbing apprenticeship committee, subject to approval by the master and journeyman organizations. Such modifications shall not alter apprentice agreements in effect at the time of the change without the express consent of both parties to such agreements.

These standards are made a part of the apprentice agreement under "special provisions." The signing of the agreement therefore binds the parties concerned to the most strict compliance with them.

Included with the typical local standards are sample forms for the agreements between employer and apprentice and employer's agent and apprentice, and an application form to be filled in for plumber apprenticeship.

Chicago Dance

With an attendance of between 500 and 600 members of the industry and their families, the Chicago Plumbing Contractors' Assn. held its annual dinner dance at the Congress Hotel on Saturday evening, February 5.

The entertainment committee as an added feature provided part of the Congress Hotel floor show which was staged between dances. To commemorate the event a special souvenir menu was arranged by the local association which featured the photograph of the president of the Chicago association, Thos. F. Hanley, Jr., and which paid tribute to the past presidents and outstanding members who had been especially active in building up the local association.

The entertainment committee was composed of Chairman T. W. Merryman, Geo. Matthews, Chas. J. Stanley, John A. Khym, Paul Grosse, Gerald F. Mooney, Samuel Erman, C. H. Jespersen, L. H. Koepke, Thos. H. Litvin, Walter Sievers, Carl Lindblad and Henry Swade.

Buffalo Officers

A large number of members attended the annual election of the Master Plumbers Assn. of Buffalo, N. Y., on February 10, which resulted in the election of the following officers: president, Allan A. Westphal (reelected); vice president, Gordon A. Webster; secretary, Alvin W. Dechert (reelected); treasurer, C. H. Brenner (reelected); directors: Elmer Dechert, Edward Haller, William Ludlow and Charles J. Leins. The directors who still have another year to serve are: Frank G. Dittly, David Patton, Jr., and George Martinke.

The Buffalo association will send a large delegation to the convention of the New York State Master Plumbers Association at Binghampton, April 26-27.

Local Certificate

- *State and local associations urged to apply now for their certificates of affiliation*

In response to many requests from state and local associations, the N.A.M.P. recently adopted a certificate of affiliation. Engraved in two colors on heavy parchment, 9½x12½ in. in size, the first certificates for the semi-annual period July 1, 1937 to December 31, 1937 are now ready for distribution. They are available to all affiliated state and local associations, provided the membership thereof is in good standing as prescribed by the N.A.M.P. by-laws.

A certificate displayed in the headquarters of an association will be evidence that all members thereof are in good standing for the period covered. It is believed by officials that the certificates will be enthusiastically welcomed by the membership as a means of building up association interest.

Requirements

The requirements for certificates of affiliation are simple:

All members of an applying association shall be paid up for the period covered by the certificate.

Listed and paid up membership for the N.A.M.P. fiscal year, July 1, 1936, to June 30, 1937, will be used as a base for determining membership for the period July 1, 1937, to December 31, 1937, covered by the first certificate.

Subsequent certificates will be issued on the basis of membership for the preceding twelve month period.

Official notice of suspension must be forwarded to the National Assn. of Master Plumbers, through affiliated state associations, to remove names from the membership rolls.

Wherever there is an indication through N.A.M.P. records, that all members of an association are not fully paid up for a period, such association must furnish satisfactory evidence that such persons are paid up, or that they are no longer members.

The membership books of the National Assn. of Master Plumbers shall be the records upon which the foregoing qualications will be based.

Duluth Officers

At a recent meeting of the Master Plumbers Assn. of Duluth, Minn., the following officers were elected: Olaf Skoog, president; Robert Black, vice-president; L. B. Avoy, secretary; John Keenan, treasurer.

N. J. Quarterly

The regular quarterly convention of the New Jersey State Assn. of Master Plumbers was held February 22 at the Robin Hood Inn, Clifton, N. J. The principal topic of discussion was on gas house heating, the program concerning which was worked out by the Public Service Corp.

The regular thirty-seventh annual convention of the association will be held at the Hotel Berkeley-Carteret, Asbury Park, May 20-21.

Officers of this association are E. J. Geyer of Englewood, president; Geo. H. Brenner of Orange, first vice president; Albert Ruehl of Newark, second vice president; C. John Klimback of Essex Falls, third vice president; George H. Werner of Orange, treasurer; W. W. Harms of Englewood, secretary.

Boston Assn. Elects

The Heating, Piping and Air Conditioning Contractors Boston Assn. held its annual meeting and dinner at the Engineers Club in Boston, Mass., February 15. More than 60 people were present at the meeting which featured reports by committees and a discussion of the voluntary code being maintained by the industry in that section.

The election of officers resulted as follows: Laurence H. Washburn, president; Patrick A. Dolan, vice president; Maurice E. Chase, treasurer; Walter H. Oleson, clerk; Milton Fisher, director; Thomas O'Callaghan, director; H. E. Whitten, director.

The speakers included retiring Pres. Harry E. Barber; John Cronin, president of the Master Plumbers Assn. of Boston and Vicinity; Ernest De Young, president of Local Union No. 537, United Assn. of Journeymen Plumbers and Steamfitters; Frank A. Merrill, past president of the Heating, Piping, and Air Conditioning Contractors National Assn.

N. C. Spring Meeting

The spring meeting of the North Carolina Assn. of Plumbing and Heating Contractors will be held in Raleigh, May 17-19. The meeting this year will be in the form of a plumbing and heating institute at State College and will be accompanied by large displays by manufacturers and jobbers.

The board of directors of the state association announced the appointment of R. M. Kermon as executive secretary of the organization. Mr. Kermon was for twelve years plumbing inspector of Wilmington, N. C. and for a number of years a member of the licensing board of that city.

New Rochelle Elects

At the regular meeting of the Master Plumbers Assn. of New Rochelle, N. Y. held recently, the following officers were elected: president, Wm. F. Martin; vice president, James E. Coffey; treasurer, Wm. T. McGuire; financial secretary, Harry Traugott; recording secretary, Joseph Hettinger.

Queens Dinner

The Master Plumbers Assn. of Queens County, New York, will hold a dinner on March 19, at the Hotel Victoria, New York City, to celebrate the golden anniversary of John F. Rogers' membership in that association. Mr. Rogers is 83 years old and has been secretary and treasurer for the Queens organization for more than 40 years as well as zone delegate to the New York State convention for at least 25 years. He was treasurer of the Greater New York Assn. for some years and has been in business in Flushing, L. I., for approximately 58 years.

The committee in charge of the dinner consists of Thos. F. Mulligan, Long Island City, chairman; Wm. E. Foley, Richmond Hill; Edw. Ruhl, Corona, L. I.; Jacob Stockinger, Jr., Long Island City.

Phila. Dinner

The fifteenth annual dinner dance of the Philadelphia Suburban Assn. of Master Plumbers was held February 17 in the Brookline Country Club. Over 300 members and guests were present. The toastmaster was Pres. Arthur Wilson and short talks were made by past state Presidents Sanderson and Sharp. Brief speeches were also given by A. J. Abel, secretary; Wm. C. Stranaghan; Lester M. Bale, treasurer, and John J. Horan.

Following the dinner and meeting there was a floor show and dancing. The program was in the hands of the following committee: Samuel W. Hiller, chairman; A. J. Abel, secretary; Lester M. Vale, treasurer; E. Ardis; Joseph Green; Timothy Powers; Harry R. Maurer, Jr.; Guy Phillips; Frank Simmons; Joseph J. McLaughlin; George Sykes; Wm. McCreary.

Buffalo Chairman

Jesse G. W. Kreiss, who was in charge of the plumbing work on Hog Island during the World War, has been appointed chairman of the Municipal Zoning Board of Appeals in Buffalo, N. Y. At one time, Mr. Kreiss was one of the officers in the plumbing establishment of J. F. Weinhemier, Inc., Genesee St., Buffalo.

Ky. Counties Elect

The Kenton and Campbell (Ky.) County Assn. of Master Plumbers held election of officers at a meeting on February 15. Those elected were: Walter G. Melching, president; Carver A. Kuch, vice president; William Keller, secretary; Albert Velten, treasurer.

The retiring officers were Pres. Charles Andejeski of Bellevue and Sec. William Terwort of Corington. The association takes in the towns of Newport, Corington, Fort Thomas, Fort Mitchell, Erlanger, Latonia and Bellevue.

Suburban Dance

The annual dinner dance of the West Suburban (Chicago) Master Plumbers Assn. was held February 19 at the Triangle Cafe, Forest Park, Ill. Several hundred master plumbers, supplymen and their wives from Chicago suburbs were in attendance. In addition to dancing following the dinner there was entertainment consisting of several vaudeville acts and bridge. The committee in charge of entertainment for the organization was composed of John M. Crawford, W. Gorin Smith and Clarence Krimmling.

Obituaries

Frank Collins

Frank Collins, for thirty-six years president of the Toledo Pipe Threading Machine Co., Toledo, Ohio, died at his home February 12. Mr. Collins

Frank Collins

was one of the original founders of that company.

H. E. Walters

Horace E. Walters, 50, district manager of Crane Co., at Birmingham, Ala., died suddenly February 23 in Chicago. He is survived by his widow and three children.

Henry Whitney

Henry Whitney, 86, who for 55 years was in the plumbing business in St. Louis, Mo., died January 29 in his home there. He is survived by three daughters, seven grandchildren and two great-grandchildren.

E. E. Watson

Elmer E. Watson, for many years engaged in the plumbing business in Chicago, died unexpectedly on February 17. He is survived by his widow, two sons and one daughter.

Jessee Higbee

Jessee Higbee, 64, superintendent of the Standard Sanitary Mfg. Co. plant at Baltimore, Md., died at his home February 12. He is survived by his widow, three sons and a daughter.

Louis Simonitch

Louis Simonitch, engaged in the plumbing and heating business in Sandpoint, Idaho, died recently at his home in that town.

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Lovekin Valves
PRODUCT OF KITSON COMPANY
Manufacturers of Quality Brass Goods for Gas, Water and All Plumbing Uses
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TYPE LTP-103 TEMPERATURE PRESSURE RELIEF VALVE (not illustrated): The highest development of Temperature-Pressure Relief protection is embodied in the immersion type LTP-103 Valve. By having the chemical fuse cartridge in direct thermal contact with water in top of tank, water temperatures are definitely limited to 175° or 195°. This valve operates unfailingly when temperature becomes excessive.

TYPE TP-103 TEMPERATURE PRESSURE RELIEF VALVE: For use on lower circulating line between coal or oil heater and storage tank. (For mounting on hot water outlet of tank, use LTP-103.)

TYPE TPV-103 TEMPERATURE PRESSURE RELIEF VALVE (not illustrated): Essentially the same as the TP-103 Valve except that it is fitted with vacuum relief. (For mounting on hot water outlet of tank, use LTPV-103.)

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H. S. Campbell

Homer S. Campbell, 53, controller of Crane Co. since 1933, died February 18. He became associated with the company in 1909, entering the accounting division in 1914. In 1921 he was made auditor of general accounts. Surviving are his widow and one son.

W. B. Harper

William Boyd Harper, master plumber of Philadelphia, Pa., died February 15 after a brief illness. Mr. Harper had been in the plumbing and heating industry many years and was a member of the Philadelphia Master Plumbers Assn.

J. P. Eddie

J. P. Eddie, sales manager of the Dail Steel Products Company, Lansing, Mich., died recently following a long illness. He had been associated with the company seventeen years.

C. A. Haines

Charles A. Haines, sales supervisor of brass pipe and copper tube at the Waterville division of the Scovill Mfg. Co., died at his home in Waterville, Conn. recently. Mr. Haines had been well known in the brass and copper fields for years, formerly being with Bridgeport Brass Company and also Chase Brass & Copper Company.

E. W. Sandborn

Edwin W. Sandborn, 67, long associated with the plumbing and heating industry, died at his home in Chicago February 16. At the time of his death Mr. Sandborn was manufacturer's agent for Commonwealth Brass Co., Detroit, Mich., Fritz Nipple Company, Philadelphia and other companies.

When a young man Mr. Sandborn was employed by the American Radiator Company for a short period and then went with the Holland Radiator Company, following which he associated himself with the United States Radiator Company as sales manager at Dunkirk, N. Y. In 1910 when the United States Radiator Company merged with the United States Radiator Corporation he became assistant sales manager.

For many years he was an active member and officer of the Western Trade Golf Assn. Mr. Sandborn is survived by his widow and one son.

W. C. Beggs

William Crowford Beggs, of Wm. C. Beggs and Company, plumbing contractor-dealers of Chicago, died January 30 following a brief illness. For several years Mr. Beggs had represented the non-members of the administrative board of the Cook County Plumbing Contractor Assn. as treasurer. He is survived by his widow and two sisters.

New Contractors, Business Changes

Los Angeles, Calif.—The Able Plumbing & Heating Co. has been established at 922 E. Manchester Ave. by Robert S. Pulaski.

Portland, Ore.—The Air Conditioning Heating Co. has engaged in business in the Failing Bldg., under the management of Donald R. Munro, Jr.

Sidney, Iowa—E. S. Schade has entered the plumbing and heating business. He was formerly at Knoxville, Iowa.

Prineville, Ore.—F. W. Austin has established a plumbing and heating business.

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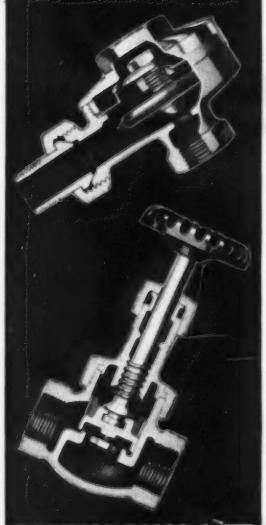

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The most complete and adaptable line of LIQUID SOAP APPLIANCES *on the market . . .*

WATROUS liquid soap dispensers are used everywhere — in schools, hospitals, hotels, clubs, public buildings, theaters, industrial plants . . . in every type of service where the old style cake soap is wasteful, often infectious, unclean, and unpleasant to use.

There is a type of Watrous dispenser to suit every requirement . . . various models for wall mounting, others attach to lavatory tops, foot or knee operated types for hospital use, gravity systems with central soap container and portable dispensers of both floor and table types.

No building can be considered modern unless it comes up to present day sanitary standards . . . and Watrous soap dispensers are an essential part of the well equipped lavatory or wash room.

Order from your jobber.

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Watrous Liquid Soap Dispensers

THEY PAY FOR THEMSELVES IN THE SOAP THEY SAVE

Convention Dates

March 4-5—SUPPLY.—Annual convention of the Southwestern Wholesale Distributors Assn., to be held in El Paso, Texas, with headquarters in the Hotel Cortez.

March 8.—MAINE.—Annual convention of the Maine State Assn. of Master Plumbers.

March 14-15.—KANSAS.—Annual convention of the Kansas State Assn. of Master Plumbers, to be held in Wichita, with headquarters in the Broadway Hotel.

March 17.—NEBRASKA.—The annual convention of the Nebraska Retail Plumbers Assn. to be held in Omaha with headquarters in the Rome Hotel.

March 20-22. — OKLAHOMA. — Annual convention of the Oklahoma Assn. of Master Plumbers, to be held in Tulsa, with headquarters in the Tulsa Hotel.

March 21-22.—WEST VIRGINIA.—Annual convention of the West Virginia Assn. of Master Plumbers, to be held in Charleston, with headquarters in the Daniel Boone Hotel.

April 7.—OIL.—Annual convention of Independent Oil Men's Assn. of New England, Inc., to be held in Boston, Mass., with headquarters in the Bradford Hotel.

April 8-9—C.S.A.—Spring meeting of the Central Supply Assn. to be held at French Lick, Ind., with headquarters in the French Lick Hotel.

April 13-15.—POWER.—Annual convention of the Midwest Power Conference, to be held in Chicago with headquarters in the La Salle Hotel.

April 18-20.—TEXAS.—Annual convention of the Texas Assn. of Master Plumbers, to be held in San Antonio, with headquarters in the Gunter Hotel.

April 18-19.—MINNEAPOLIS—Annual convention of the Minneapolis Retail Plumbers Assn., to be held in Minneapolis, Minn., with headquarters in the Nicollet Hotel.

April 18-19—COLORADO.—Annual convention of the Colorado Society of Sanitary and Heating Engineers, to be held in Denver with headquarters hotel not yet selected.

April 18-19. — MINNESOTA. — Annual convention of the Minnesota State Master Plumbers Assn., to be held in Minneapolis with headquarters in the Nicollet Hotel.

April 20-22.—STOKERS.—Third annual short course and exhibition on solid fuels and domestic stokers, to be held in Madison, Wis., at the University of Wisconsin.

April 25-26.—IOWA.—Annual convention of the Iowa Master Plumbers Assn., to be held in Cedar Rapids with headquarters in the Hotel Montrose.

April 25-26.—MISSOURI.—Annual convention of the Missouri State Assn. of Master Plumbers, to be held in Jefferson City with headquarters in the Missouri Hotel.

April 25-26.—SOUTH CAROLINA.—Annual convention of the South Carolina Assn. of Master Plumbers, to be held in Charleston with headquarters in the Frances Marion Hotel.

April 26.—MASSACHUSETTS. — Annual convention of the Massachusetts State Assn. of Master Plumbers, to be held in Boston with headquarters in the Copley Plaza Hotel.

April 26-27.—MICHIGAN.—Annual convention of the Michigan Assn. of Master Plumbers, to be held in Lansing with headquarters at the Olds Hotel.

April 29-30. — COAL. — Conference on the Technology and Utilization of Anthracite Coal, to be held in Bethlehem, Pa., at Lehigh University.

May 2-3.—FLORIDA.—Annual convention of the Florida State Assn. of Master Plumbers and Heating Dealers, Inc., to be held in Jacksonville with headquarters (tentative) in the Seminole Hotel.

May 2-4. — PENNSYLVANIA. — Annual convention of the Pennsylvania Assn. of Master Plumbers, to be held in Philadelphia with headquarters in the Bellevue-Stratford Hotel.

May 6-7.—WASHINGTON.—Annual convention of the Assn. of Master Plumbers of the State of Washington, to be held in Bellingham with headquarters not yet selected.

May 9.—A.S.H.V.E.—Annual convention of the New York Chapter of the American Society of Heating and Ventilating Engineers, to be held in Buffalo with headquarters at the University Club.

May 9-11.—INDIANA.—Annual convention of the Indiana Assn. of Master Plumbers, to be held in Indianapolis, with headquarters in the Lincoln Hotel.

May 13-14. — OREGON. — Annual convention of the Oregon Master Plumbers Assn., to be held in Portland at a headquarters not yet selected.

May 16-19.—CALIFORNIA.—Annual convention of the California State Assn. of Master Plumbers, to be held in Sacramento with headquarters at the Hotel Senator.

May 20-21.—NEW JERSEY.—Annual convention of the Master Plumbers Assn. of New Jersey, to be held in Asbury Park with headquarters in the Hotel Berkeley-Carteret.

May 21. — TENNESSEE. — Annual convention of the Associated Master Plumbers of Tennessee, Inc., to be held in Chattanooga with headquarters not yet selected.

May 23-24.—KENTUCKY.—Annual convention of the Kentucky Assn. of Master Plumbers, to be held in Bowling Green with headquarters in the Helm Hotel.

May 25-27.—GAS.—Annual convention of the Assn. of Gas Appliance & Equipment Mfgrs., to be held in White Sulphur Springs, West Va., with headquarters in the Greenbrier Hotel.

May 26 — N.I.C.B. — Annual convention of the National Industrial Conference Board, to be held in New York City, with headquarters in the Waldorf-Astoria Hotel.

May 31-June 2.—H.P.A.C.—Annual convention of the Heating, Piping and Air Conditioning Contractors National Assn., to be held in Boston, Mass., with headquarters at the Statler Hotel.

June 6-9.—N.A.M.P.—Fifty-sixth annual convention of the National Assn. of Master Plumbers, to be held in Cleveland, Ohio, with headquarters in the Hotel Cleveland.

June 17-19.—NEW JERSEY.—Annual convention of New Jersey State League of Master Plumbers, to be held in Atlantic City with headquarters in the President Hotel.

June 24-26.—DELAWARE. — Annual convention of the Delaware Assn. of Master Plumbers, to be held in Rehobeth with headquarters hotel not yet announced.

August 29-Sept. 3.—N.A.P.E. — Annual convention of the National Assn. of Power Engineers, to be held in Grand Rapids, Mich., at the civic auditorium.

September 21-23. — N.I.A.A. — Annual convention of the National Industrial Advertisers Association, to be held in Cleveland, Ohio, with headquarters in the Statler Hotel.

Secretaries of organizations planning events in 1938 are invited to send to this department information on the dates, programs and other details.

T. Z. Hockett, manager, and W. W. Schlegel, salesman inspecting a bathroom unit in the new South Bend showroom of Standard Sanitary Manufacturing Co.

Women

Conducted by . . . Dorothy Edwards

Auxiliary Elections

• *New organization makes bow in New Hampshire—Boston meeting elects officers—Ohio convention report*

Boston Events

The monthly meeting of the Women's Auxiliary of the Boston Assn. of Master Plumbers was held February 15 at the home of Mrs. Lydia Jacobs, 429 West Roxbury Parkway, West Roxbury, Mass.

A large turnout attended the meeting which was held in the form of a valentine party. Luncheon was served by the hostess, consisting of valentine candy hearts, ice cream and valentine cakes.

The January meeting was held at the home of Miss Mary A. McKenna, 21 West Cedar St., Boston, Mass., who was the outgoing president of the auxiliary. Earlier in the day the members and guests gathered at the Colonial Kitchen where a fine dinner was enjoyed.

After a short meeting the following officers were elected and installed for the ensuing year: Miss Mary Cleary, president; Miss Anna Rose, vice president; Mrs. Marguerite A. Ford, secretary; Mrs. Theresa A. Curtin, treasurer.

The retiring officers were presented with flowers and gifts of silver and glass. Solo selections were rendered by some of the people in the organization.

Auxiliary for N. H.

At the annual meeting of the New Hampshire State Master Plumbers Assn. held at Concord, February 9, a women's auxiliary was organized by Mrs. J. Preston Perham of Boston, Mass., and Mrs. Herbert L. Rose, Jr., of Cambridge, Mass. Mrs. Perham is a past president of the National Women's Auxiliary and Mrs. Rose, is now first vice president.

The officers elected by the new organization are as follows: Mrs. Manley Morgan, Concord, president; Mrs. O. B. Pierce, Peterboro, vice president; Mrs. Russell Spaulding, New London, secretary; Mrs. Joseph Greenwood, Bristol, treasurer.

Phila. Election

Members of the women's auxiliary of the Brotherhood of Master Plumbers of Philadelphia, Pa., held election of officers at their January 26 meeting. The following were elected: Mrs. Harry Seligman, president; Mrs. Albert Mills, vice-president; Mrs. I. Raphael, treasurer; Mrs. Louis Klampfner, secretary. Members of the committee for the year 1938 are: Mrs. S. Pollin, Mrs. W. Weber, Mrs. A. Walker, Mrs. P. Raben, Mrs. B. Skwerskey, Mrs. L. Singer, Mrs. A. Perry, Mrs. R. Polskey, Mrs. E. Rodgers, Mrs. H. Horowitz, Mrs. B. Small, Mrs. B. B. Silverman, Mrs. P. Cohen.

The meeting was followed by a card party for members and friends. Prizes were awarded and refreshments were served.

Ohio Convention

Members of the Ohio auxiliary were active in the social program at the state convention held in Cleveland February 7 to 9. A theater party Monday night, a night club and floor show Tuesday night and a banquet on Wednesday featured the program.

Officers elected at the meeting are: Mrs. Edward Frank, reelected president; Mrs. M. F. Shelton, Youngstown, vice president; Miss Marion Doench, Cincinnati, secretary; Mrs. Henry S. Blank, Dayton, reelected treasurer.

Kansas City Elects

Members of the Women's Auxiliary of the Kansas City, Mo., Assn. of Master Plumbers held their twenty-eighth annual election of officers at the home of Mrs. E. D. Hornbrook on February 10. At the luncheon following the election tables were decorated with unique place cards and American beauty roses.

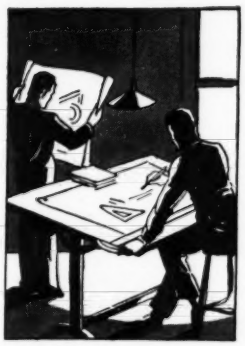
The results of the election were as follows: Mrs. G. K. Jorgenson, president; Mrs. G. Oxler, first vice-president; Mrs. Carl Ekstrom, second vice-president; Mrs. Joseph Levene, third vice-president; Mrs. Ervin Spaeth, recording secretary; Miss Myrtle Burke, treasurer; Mrs. M. C. Enggas, corresponding secretary; Mrs. Frank Smith, sergeant-at-arms; Mrs. Wm. Cowger, historian.

The outstanding achievement of the year's work by the auxiliary was the donation of 276 new garments to the local needlework guild, an institution designed primarily for the purpose of helping needy children.

Dayton Meet

Twenty members of the Women's Auxiliary of the Dayton Master Plumbers Assn. were present at their monthly meeting and luncheon at the Young Womens League February 17. The chairman of the arrangements committee, Mrs. Wm. Haas, was assisted by Mrs. Henry Saunders and Mrs. H. J. Osterfeld. Reports were read of the recent state convention of the Ohio Master Plumbers Assn. in Cleveland, and the business portion of the meeting was followed by a social afternoon at cards.

Two new members of the organization, Mrs. Joseph Guy and Mrs. Walter Steward were introduced by Mrs. Vehorn, chairman of the membership committee. The next meeting will be held on March 17 and will be in charge of a committee consisting of Mrs. E. G. Schad, Mrs. Frank Slater and Mrs. John Haas.



Questions

Heater Connections . . . Water Pressure . . . Supply System . . .

Heater Connections

- *Suggested here are several possible methods of connecting two domestic water heaters to supply water for sterilizing purposes*

To the Editor:

A law has been passed in our territory which requires all restaurants and taverns to maintain a constant supply of hot water between 160 deg. Fahr. and 180 deg. Fahr. for sterilizing glassware. The installation in question has an arrangement where a 30 gal. tank is heated from a hot water heater and it is desired to add a new tank of similar size with an automatic hot water heater arranged so that both tanks or systems

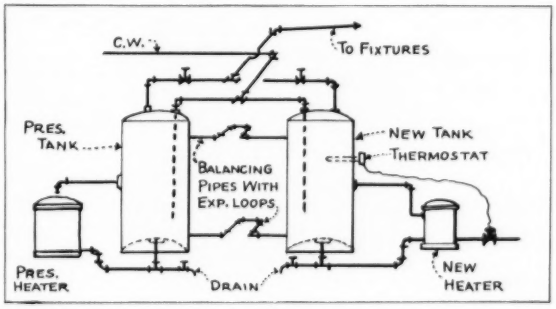


Fig. 1

would be heated simultaneously by the old heater and the new automatic heater.

Mass. L. S. C.

To the Reader:

It seems to us that your arrangement should be such that the old heater would be used to the maximum extent possible and the new heater having automatic control, would only be used to supplement the other when, and as, necessary. In order to do this the tanks would have to be arranged as a single unit and both sources of heat connected up to heat both tanks as equally as possible. Fig. 1 shows one method of doing this in which the tanks are cross connected at top and bottom so that their temperatures will equalize and the old heater is arranged to circulate to one tank while the new heater is arranged to circulate to the other. Another scheme which might balance the temperatures in the two tanks even more equally is shown in Fig. 2 where the first heater delivers heated water to one tank but returns out of the other and the automatic heater is similarly con-

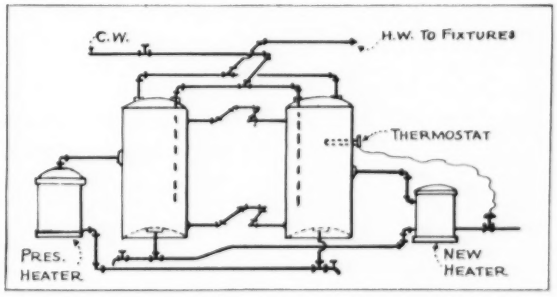


Fig. 2

nected, thus forcing a circulation through both tanks when either or both sources of heat are in operation.

We are wondering, however, if the scheme given in Fig. 3 would not be a better one, this consisting of using

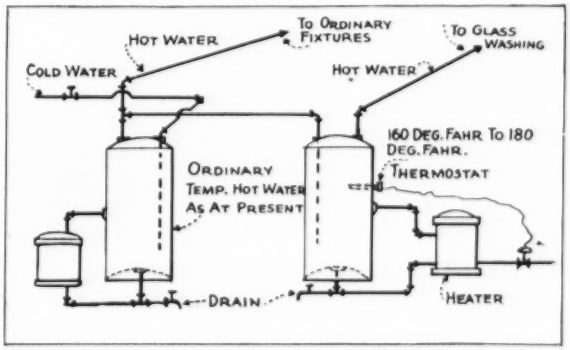


Fig. 3

the heater in the present tank alone for supplying hot water to the other fixtures and then using the new tank with the new heater as an independent supply of water at 160 to 180 deg. Fahr. for the faucets where

the glass washing takes place. The new tank would then be fed from the present tank with preheated water and only the water used in glass washing would have to be heated to the higher temperature, instead of all of it being heated to this temperature.

Water Pressure

- *The question of maintaining the proper pressure on the fixtures in a public building are discussed here*

To the Editor:

We have a problem in a local high school as follows: the supply line to the building is 1½ in. and we believe this is not large enough to handle the following:

31 water closets
6 drinking fountains
8 urinals
3 sinks
2 lavatories

On the third floor there are 3 water closets that come off another 1½ in. line, this line has a pressure of 25 lb. when the drinking fountains and other fixtures are in use.

The rest of the water closets are controlled by tanks that fill and discharge every 30 min. using around 140 g.p.h. thus keeping the pressure down.

The 1½ in. line that supplies the flush valves has a pressure of 25 lb. and when one of these closets is flushed the pressure drops to 0 lb. and the closets keep running until the pressure builds up and shuts off.

New York. C. H. D.

To the Reader:

If a pressure tank is installed as an aid to flushing the three closets which are taken off the 1½ in. line where the pressure is 25 lb., the air will be compressed in this tank until the water occupies about 63 per cent of the volume of the tank. If a single closet is flushed, it will require between 5 and 7 gal. of water according to the setting of the flush valve and, if two closets are flushed simultaneously, there will be an instantaneous—or practically instantaneous demand—for 10 to 15 gal. or around 2 cu. ft. of water. While the flushing of two closets at the same time would be an unusual condition, it is entirely possible for it to happen occasionally where three closets are supplied.

Assuming that it is permissible to drop the pressure in the line about 5 lb. instead of to zero as at present, the amount of water which could be drawn off from the pressure tank with this amount of drop in pressure is about 6 per cent of the total tank capacity leaving 57 per cent of water in the tank and expanding the air from the 37 per cent which it occupied at 25 lb. gauge pressure to 43 per cent of the tank capacity at 20 lb. pressure. If only one closet is assumed as flushing at any one time, then this 6 per cent of water which could be drawn off before the pressure drops to 20 lb. would have to equal about 1 cu. ft. (or 7.5 gal.) and the tank capacity would be

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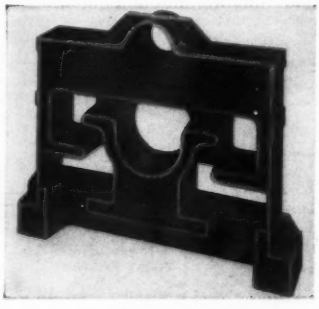

Cut-away "section" shows how heat transfer is best affected.

21 Patented Features
Unbelievable Economy
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Performance Proven in hundreds of installations
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No Competition
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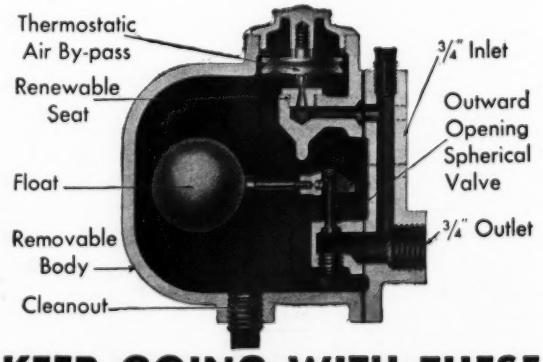

KEEP GOING WITH THESE SERIES "26" TRAPS

The *outward opening valve feature* of these Webster Series "26" Traps helps keep piping clear of water... keeps steam-using equipment at top production. Occasional accidental excess pressures do not water-log but simply blow the condensate through. Series "26" combination float-and-thermostatic traps are light. Compact. Several sizes for pressures up to 15 lbs. per sq. in. For higher pressures—to 125 lbs. per sq. in.—use Webster Series "79" Traps.

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50 YEARS OF HEATING PROGRESS

Representatives in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada

1 cu. ft. / 0.06 or 16 plus cu. ft.

while if two closets are assumed as being flushed at the same time, the amount of water used from the tank would be twice as much and the total tank capacity would be

$$\frac{1 \text{ cu. ft.} \times 2}{0.06} \text{ or } 33 \text{ cu. ft.}$$

The size of the tank could be reduced if a greater pressure drop in this line is permissible. For instance, if the presssure in the line were allowed to drop to 15 lb. gauge, which still would be entirely sufficient to operate the flush valves, the air in the tank under 25 lb. would occupy 37 per cent of the tank capacity the same as before but on a reduction of pressure in the tank and in the line to 15 lb., this air would expand so as to occupy 50 per cent of the tank volume thus supplying water from the tank to the closets to the extent of

50 per cent minus 37 per cent or 13 per cent

of the tank volume.

In supplying one closet this 13 per cent of the tank volume would have to equal 1 cu. ft. and the tank volume would have to be

1 cu. ft. / 0.13 or 7½ cu. ft.

while to supply two closets at the same time the tank volume would have to be

2 cu. ft. / 0.13 or 15 cu. ft.

The size of pipe from the tank to the closets should be not less than 2 in. owing to the low pressure and should have a 1½ in. branch to each flush valve reducing to 1 in. at the valve connection.

Supply System

- *An unusual problem confronts this reader; that of venting an exposed tank and preventing it from freezing*

To the Editor:

We have a local water system consisting of a water tower supplied with water from a well through a turbine pump. The pump delivers water through a 4 in. line into the 6 in. main which feeds the tower and the houses. A check is installed at the point where the 4 in. line joins the 6 in. main and at the pump an air vent is provided to prevent the water from freezing at the pump when the pump is not in operation. This vent admits air to the line so that the water in the line drops back into the well as soon as the pump stops. When the pump restarts, this air is blown out into the 6 in. main and creates trouble in the houses supplied.

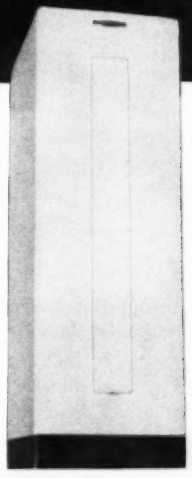
Ind. G. R. M.

To the Reader:

One scheme would be to leave the installation as you now have it and to install an air separating tank with a ball cock to relieve the air, this being somewhere in the pump discharge line on the pump side of the check valve; you probably would want to put this near to the pump house. This tank would have to have sufficient volume between the float level and the top of the pipe to permit all of the air entering the line through the

Investigate

THE LOW COST OF HOTPOINT ELECTRIC WATER HEATING



Prove to your own satisfaction the amazing economy of Hotpoint Automatic Electric Hot Water service. Inquire first about present low electric rates for water heating. Then study the built-in features which contribute to *extra* savings — thick 3½ inch rock wool insulation — efficient Calrod heating units immersed directly in the water inside the tank — built-in heat trap — improved Thermosnap and many others. Offer your customers this modern low-cost hot water service. Get the facts — today!

THE VOGUE — Hotpoint's smartly styled rectangular type water heater for the modern home.

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EDISON GENERAL ELECTRIC APPLIANCE CO., Inc.
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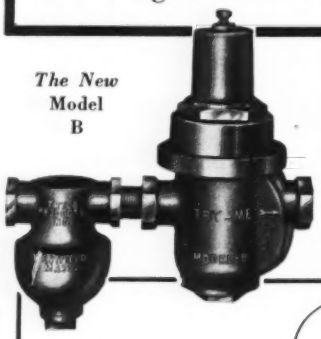
ELECTRIC WATER HEATERS

Built to Meet YOUR *Standards*

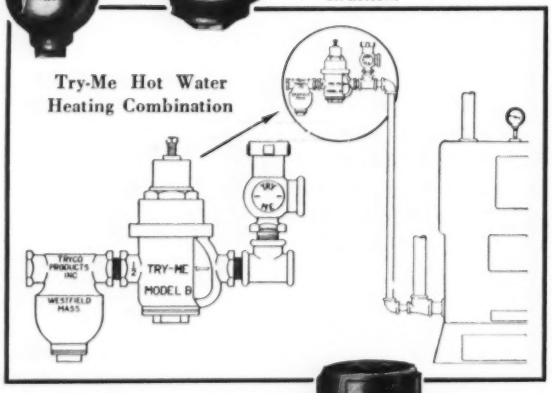
TRY-ME products are made to meet *your* standards for most efficient performance. Constructed of quality materials throughout, these better specialties may be relied upon to give long-lasting, dependable service. The many unique features of TRY-ME products make them worthy of your most careful consideration. It will pay you to investigate them today.

The New Model B



• *The new improved Model B TRY-ME Pressure Reducer and Strainer is ideal for use when pressure lower than the initial pressure is desired. It can be used satisfactorily on either water or air services. Equipped with a leak-proof plunger-diaphragm, the TRY-ME Model B permits a wider, unrestricted seat opening—and so delivers a larger volume than is possible with ordinary type reducers. BRONZE corrosion-free construction.*

Try-Me Hot Water Heating Combination



• *The TRY-ME Pressure Relief Valve (illustrated at right), endorsed by safety authorities in cities with even the strictest of building codes, offers a most effective means to greater safety for your customers and peace of mind for yourself. Its special lubricated Jenkins seat prevents sticking . . . its safety lock cap maintains its original setting . . . its non-torsional spring button insures accuracy in setting . . . its extra large seat area insures instantaneous relief . . . it has a wide range (up to 225 lbs. per sq. inch) . . . it is sealed against tampering. Install it and get real relief.*

• *The above illustration shows how the TRY-ME Model B may be used in combination with the TRY-ME Pressure Relief Valve to provide efficient, compact, safe hot water heating pressure control.*

TRY-ME Products can be obtained from leading wholesalers everywhere.

TRY-ME

TRYCO PRODUCTS, INC.
WESTFIELD, MASS.

vent to be retained by the tank when it is discharged ahead of the water when the pump starts; the float would then open due to the air being delivered into the tank and lowering the water line. This air would be gradually discharged while the pump was operating and ultimately the water in the tank would again rise to the

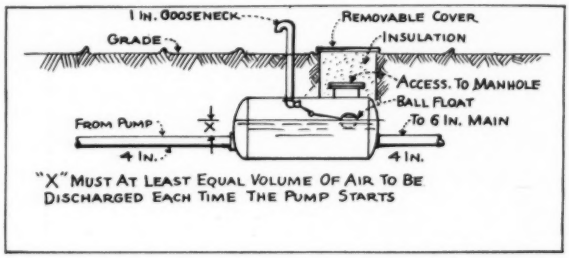


Fig. 4

float level. See Fig. 4. The difficulty would be to keep this tank from freezing and therefore, it would have to be buried and a manhole provided for access, which possibly would have to be filled with some insulation to prevent freezing, as shown in the sketch.

Heater Sizing

• *Previous article raises question of how to figure domestic hot water*

To the Editor:

In a recent issue of Domestic Engineering the article entitled "The Cause—and the Cure" gave a burner formula for hot water which we find very helpful; will you please give one for steam. If these formulae were included in a future issue of the magazine it would be a big help to us.

Iowa G. J.

To the Reader:

The formula which you mention as being included for hot water in the article which appeared in Domestic Engineering is apparently the one used in the discussion which determines the Btu. to supply 200 sq. ft. of hot water radiation. The formula for this is based on the emission of the hot water radiator of 150 Btu. per sq. ft. of radiation per hour, adds 25 per cent for the pipe losses and then computes the Btu. per hour necessary to be supplied to the system. Put in the form of a formula it may be exressed as

(R plus 25 per cent of R) $\times$ E equals Btu. required when

R is the amount of radiation in sq. ft. of rating or equivalent direct radiation

E is the efficiency of the radiation in Btu. per sq. ft., per hr.

Btu. is the total heat per hr. required to supply the system on the coldest day.

The efficiency per sq. ft. usually is taken as the Btu. per hr. rating for the various types of systems. For

example, the same formula may be used for steam heating by simply substituting the efficiency of 240 Btu. for the steam radiator for "E."

Questions For READERS

Here is the answer to the question appearing in the January issue of DOMESTIC ENGINEERING. Many replies were received, but the one reproduced here answered the question in the clearest and most interesting manner. The question was:

It is desired to join 2 pipes which are of the same size and 3 ft. apart horizontally, one being 2 ft. higher than the other, as shown in Fig. 5 with 45 degree fittings and filler pipe; if the 45 degree fittings measure 3½ in. center to face and the pipe screws into the fitting ½ in., what will be the exact overall length of the filler piece?

This problem is one often encountered in heating and plumbing and consists of connecting two lines together when they are on different levels and offsetting one from the other using a single offset and only two fittings. The plan view shows that these pipes are 3 ft. apart horizontally but does not give the true distance between the pipes as one is 2 ft. higher than the other. The true distance that one pipe is from the other is indicated, however, in the elevation looking at the ends of the pipes and may be calculated from the formula for finding the hypotenuse of any right angle triangle when the two

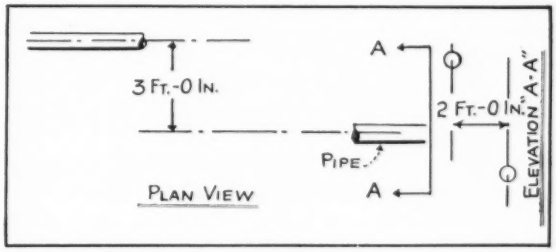


Fig. 5

short sides are known. In this case the two short sides are 3 ft. and 2 ft. respectively and the formula to be used is that the hypotenuse is equal to the square root of the sum of the squares of the two sides or

$\sqrt{A^2 \text{ plus } B^2}$ equals the Hypotenuse

when A and B are the two short sides.

Applying this to the problem here gives

$\sqrt{2^2 \text{ plus } 3^2}$ equals the Hypotenuse

or

$\sqrt{4 \text{ plus } 9}$ equals the Hypotenuse

or

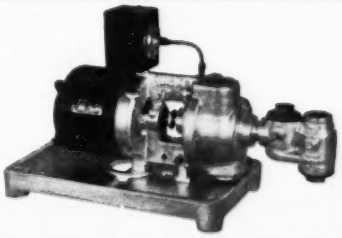
$\sqrt{13}$ which is 3.60 ft.,

The INDEPENDENT PUMPING UNITS of the BURKS Super Niagarette SERIES OF WATER SYSTEMS

OPEN A BIG MARKET FOR BURKS DEALERS

1. Sell to replace worn-out pumps where old storage tank will continue to serve.
2. Sell for booster service.
3. Sell as pumping unit of Water System to be assembled when installed.

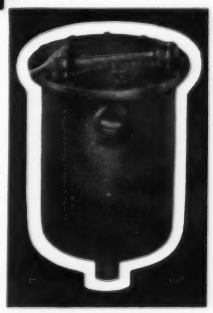
Complete with Pumping Unit, Pressure Switch, Cast Iron Base, Check Valve and Strainer, Motor.



DECATUR PUMP COMPANY • DECATUR, ILL.

MEETS *these* SUDDEN DEMANDS *for* HOT WATER

Below is the STANDARD Round "O" Tankless Heater which provides an abundant supply of instantaneous hot water all through the year.



WHEN, as so often happens, both heat and hot water are required at one and the same time, are you reasonably sure that the water heater you install will meet the emergency? If not, you'll find, in the STANDARD Round "O" Tankless Heater, your most satisfactory answer to this perplexing problem. Even at times when the boiler water temperature is at its lowest point, the STANDARD Round "O" will supply 20 gallons of instantaneous hot water, a function it performs, unfailingly, throughout the year. No matter how sudden or how frequent the demand for hot water may be, trust the STANDARD Round "O" to meet the demand.

Investigate the business producing possibilities of the STANDARD Round "O". Every owner of a hot water heating plant is a really live prospect for the advantages available to him in this superior tankless heater. Write for complete details.

STANDARD TANKLESS

STANDARD HEATER & OIL EQUIPMENT CO.
245 CORNELISON ST.
JERSEY CITY, N. Y.

and this is 3 ft. and 0.60 ft. × 12 in. or about 7¼ in. Therefore, the true distance between the two pipes measured perpendicular to their center lines is 3 ft. 7¼ in.

The next thing to determine is the angular length that will result if 45 degree fittings are used to close up this distance. As the true distance between the pipes has been indicated by "X" on the diagram shown in Fig. 6, if this is laid out on the plan in the manner shown so as to give a 45 degree angle to the turn it is evident that

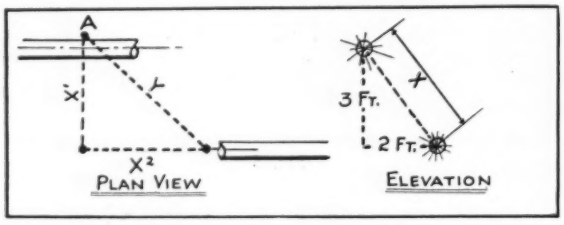


Fig. 6

"X 1" will be equal to "X" after the triangle "X 1," "X 2" and "Y" has been turned down to a horizontal position and the distance that point "A" falls beyond the second pipe will be eliminated when the triangle has point "A" raised up 2 ft. to meet the upper pipe. So we now have another right angle triangle of which the two short sides are equal to "X" or 3.60 ft. Solving for "Y" the same as was done for the first hypotenuse it is found that "Y" is

$\sqrt{3.6^2 \text{ plus } 3.6^2}$ or 5.09 ft. which is about 5 ft. 1⅛ in.

Out of this length, however, the fittings take 3½ in. on each end or a total of 7 in. leaving

5 ft. 1⅛ in. minus 7 in. or 4 ft. 6⅛ in.

of exposed pipe for the filler to which the distance that the pipe screws into the thread must be added or ½ in. on each end making 1 in. total addition or

4 ft. 6⅛ in. plus 1 in. or 4 ft. 7⅛ in.

How Would You Answer This Question?

Assuming an apartment house has 100 *occupants and the usual daily hot water usage is about* 40 *gal. per person, what size of tank in gallons should be used and what capacity of hot water heater in gallons per hour should be installed if the peak hour demand is* 10 *per cent of the total daily usage as is the usual ratio in apartments?*

An answer, suitable and interesting, will be paid for and published in the May issue of DOMESTIC ENGINEERING.

Because of the many questions which are sent to this department of DOMESTIC ENGINEERING, space limitations alone would prevent presentation of all the questions which are received. Also, many of these questions duplicate others already answered; many are highly controversial in nature, and many are of a type which would not be of general interest to our readers. However, all questions which are sent in are answered by letter, whether or not they are published in these columns, providing there is a return address.

SPECIAL SINKS to fit any space

Non-absorbing and non-staining, Alberene Stone is ideal for sinks and laundry trays. Tongue and groove joints with hidden bolts, permanently cemented, have the strength, solidity and tightness of one-piece units.

As you know, Alberene is natural quarried soapstone. Acid-, heat-, and wear-resisting. It can be shaped, sawed and fabricated in any desired shape or form without danger of chipping or spalling.

Order Alberene Sinks of any dimensions to fill any desired spaces. Shipment will be made within one week from the receipt of order and complete details as to sizes, openings, etc.

Write for special price on the Alberene 44" Laundry Tray, plain and in Duco colors.

ALBERENE STONE CORP. OF VIRGINIA
419 Fourth Avenue, New York, N. Y.
Quarries and Mills at Schuyler, Va.

ALBERENE STONE SINKS • TRAYS

You buy a hydrant for service and the best assurance of service is the record of the maker.

Kupferle hydrants have a nation wide record of well over a half century of making good in actual operation.

Specification sheets sent on request. Sold only through regular wholesale channels.

JOHN C. KUPFERLE FOUNDRY CO.
St. Louis, Mo.

YARD HYDRANTS
WALL HYDRANTS
STREET WASHERS
FIRE HYDRANTS

KUPFERLE

Recognition

The recognition our industry is receiving ties-in with present day trends and forces, predisposes the public to buy now. Booklets and broadsides show the convenience and economy of running water on the farm —and plumbing sales follow the water lines. A suggested news release is given to help contractor-dealers identify themselves actively with FHA. Plumbing and Heating Industries Bureau concentrates valuable publicity where it will be most effective—in real estate and building publications.

Rural Water Systems

- *Electric Water System Council prepares four new booklets and broadsides to aid dealers, impress the public with the advantages of running water*

Four new booklets and broadsides to impress the public with the advantages of running water and to help dealers cash in on the widening market for electric water systems are in preparation. This material is produced by the Electric Water Systems Council, and is keyed in with the general five-year program started last year with a sales objective of 1,500,000 units. The goal for 1938 is 250,000 electric pumping systems.

A handsome and profusely illustrated booklet printed in two colors and entitled "Running Water" will be sent by electric power companies to all new meter connections. This booklet will bring to the farm family the complete story of the advantages of running water under pressure. Copies will be available for dealers.

The basic story of the convenience, profits, and better health resulting from an abundant supply of running water under pressure will also be told in an attractive broadside. This will be sent to old as well as new meter connections. Copies will be sent by utilities to lists of prospects supplied by dealers.

In order to enlist the active cooperation of the managers of electric power companies, a booklet describing the five-year promotional program and its significance in terms of increased revenue will be issued.

PLUMBING FOLLOWS WATER LINES

The fact that more than half of the electric pumps sold in recent years have resulted in the sale of a complete farm plumbing system including plumbing fixtures, tanks, pipe, valves, and fittings is dramatically called to the attention of dealers in the fourth of the new promotional pieces planned for 1938.

In addition to the new literature just described, all of

It's Combustioneer
AUTOMATIC COAL BURNER
THE LEADER—ALL THE WAY

On every count the decision goes to Combustioneer as it puts the Kayo on competition and leads all the way in the field of Automatic Coal Heating.

IT'S Combustioneer —THE PIONEER

1 *Proved* engineering—research—and complete manufacturing and testing facilities *under one roof* protect your reputation.

IT'S Combustioneer —THE PRECISION-BUILT

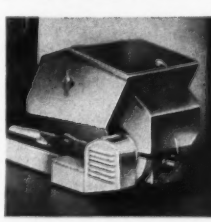
2 Highest standards of precision-built manufacture insure dependable and economical operation.

IT'S Combustioneer —THE SALES LEADER

3 Nine *exclusive* and demonstrable construction and convenience features give you unquestioned sales leadership.

IT'S Combustioneer —THE PROFIT MAKER

4 Sound price and discount structure, powerful sales plans and national advertising assure you bigger, quicker profits. Write for details to Combustioneer, Springfield, Ohio.



Combustioneer
AUTOMATIC COAL BURNER
FOR HOMES, APARTMENTS AND FACTORIES
DIVISION OF THE STEEL PRODUCTS ENGINEERING CO.

MILE BY MILE

THEY'RE BRINGING DOLLARS TO YOU

MILE by mile rural electrification is pushing its way into the country, bringing a new life—a better life to countless thousands of homes—bringing bigger profits to you. For each planned mile of electrification means potential customers, each electrified home a new demand for all the comforts running water will bring.

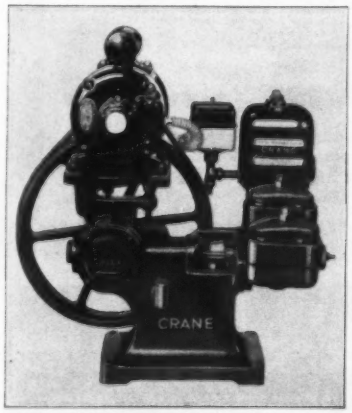
And Crane Pumps are supplying this demand. Backed by a famous name and a justly famous reputation for quality, made in both shallow-well and deep-well types, these pumps open up new and greater sources of profit for you. Now is the time to lay the groundwork for a bigger year with Crane water systems. Let us give you complete information.

CRANE

VALVES · FITTINGS · PIPE · PLUMBING · HEATING · PUMPS

CRANE CO. · GENERAL OFFICES: 836 SOUTH MICHIGAN AVENUE · CHICAGO

NATION-WIDE SERVICE THROUGH 134 BRANCHES & MORE THAN 500 WHOLESALERS



Crane Shallow-Well Pump

Crane Deep-Well Pump

Get all the facts on the new Crane Finance Plan operating under F. H. A. approval, at Government rates.

the activities which proved worth while in 1937 will be continued.

The dealer manual, "Where Water Runs Dollars Flow," will be reprinted and should find an increasing field of usefulness as contractors and engineers become familiar with the economy of air cooling by well water.

Cards for dealers and the animated window display are available and may be obtained from distributors of electric water systems.

The New FHA—And You

- *A news story in the local paper will help the contractor-dealer get more business from the modernization provisions of FHA*

Here is a typical news release on the new FHA which contractor-dealers may send to their local newspapers, with their own name and address inserted in the blank spaces. By doing this, contractor-dealers can help increase the volume of modernization, build up the amount of this business to be won by our industry, step-up their own individual prosperity. The release follows:

Attention was called today to the new, liberal borrowing arrangements for home modernization under the revised Federal Housing Act by ————, plumbing and heating contractor-dealer of ———— St.

"A home owner can now borrow as much as $10,000 for remodeling purposes," said Mr. ————, "no down-payment is necessary, and he may have as long as five years to repay the money.

"Many persons who have wanted to build an extra bathroom, or to modernize their outmoded bathroom, kitchen or laundry, now may find convenient FHA means," he said.

Mr. ———— pointed out that master plumbers contracted for about a third of the modernization under the old FHA clauses which expired early last year. He said that the plumbing and heating contractor-dealer now can make remodeling more convenient for the home owner by installing the bathroom, kitchen and laundry complete.

Magazine Articles

- *Three new articles in real estate and building publications have an effect tending to give our industry a larger share of the new housing dollar*

Since much of the new construction stimulated by the amended National Housing Act will be promoted by realtors and builders, much of our industry's recent publicity efforts have been directed to these groups.

Well illustrated articles by Plumbing and Heating Industries Bureau have appeared in *Real Estate News*, New York City, and *Building Trends*, Dallas, Texas. For a third article—in *National Real Estate Journal*—the bureau provided illustration.

The story in National *Real Estate Journal* included results of a survey posed upon this question: "What additional facilities (besides the principal bathroom) do

you consider desirable?" A total of 417 realtors voted. Two hundred and seven considered the first floor lavatory desirable; 158 thought it necessary; 177 considered the extra bath on the second floor desirable, 107 necessary; 160 thought the basement lavatory desirable, 32 necessary; 87 thought one bath for each bedroom is desirable, while four considered it a necessity.

FAVOR LARGER SIZES

The replies to the question designed to bring out the realtors' preferences as to the size of the bathroom also disclosed the importance of the bathroom in the mind of the present-day buying public. Whereas it is well recognized that the bathroom size of 5 by 7 ft. will accommodate the fixtures, the vote showed this size to be not so popular as larger sizes.

The text in the article "New Plumbing Fixtures Designed for Space Economy" is interesting, since it does such a forthright promotion job for our industry. Following are the first few paragraphs:

"What are some of the characteristics of modern plumbing fixtures?

"Better design—beauty in style and color—these are obviously the most outstanding features.

"Equally important is the better engineering of the fixtures, resulting in superior performance, lower maintenance cost, and trouble-free operation.

GAIN SPACE ECONOMY

"Another decided advance is in the compactness of the fixtures and the trend toward economy of space. Many plumbing fixtures today are available in space-saving sizes. New fixtures recently announced were designed particularly with the object of enabling owners of apartments and tenements to provide adequate sanitary facilities in the minimum of space.

"The availability of room-saving equipment is particularly important to the owner who contemplates a remodeling program for an apartment or tenement building. In modernization work it is frequently difficult to find adequate space for plumbing fixtures.

"Not only are modern fixtures more compact, but they also permit more flexibility in their arrangement. Take the closet tank, for instance. The close-coupled type of closet stands independently of the wall. In other words, the closet need not be fitted snugly against the wall.

"Thus, any structural irregularities in the wall or any projections will not interfere with the placing of this type of fixture.

HAVE GREATER FLEXIBILITY

"Similarly, roughing-in materials today have greater flexibility and can be adapted to conditions which a few years ago could not have been met. Smaller pipe sizes and flexible materials have revolutionized roughing-in work. These developments, as well as improvements in fittings and valves, are particularly significant in modernization work."

The article in *Building Trends* is entitled "Sales Appeal in the Kitchen." Before and after views of kitchens are shown.

JOHNSON
SETS A STANDARD
IN OIL BURNERS
with the new
"BANKHEAT" PRESSURE TYPE

"BANKHEAT" Pressure Type
Johnson Oil Burner

...compact, efficient... and built for years of service. Automatically shuts off when the required temperatures are reached. As burner stops, counterbalanced draft shutter closes, preventing passage of cold air through boiler, conserving fuel & lengthening life of furnace.

S. T. JOHNSON CO.
940 ARLINGTON, OAKLAND, CALIFORNIA
401 N. BROAD STREET, PHILADELPHIA, PA.

THERE'S A JOHNSON FUEL OIL BURNER FOR EVERY PURPOSE

MOST in
CLEANABILITY . . DEPENDABILITY
OPERATING ECONOMY
MAINTENANCE ECONOMY
CAPACITY . . APPEARANCE

Adams
KLEEN TUBE
The Cleanable WATER HEATER

ADAMS ENGINEERING COMPANY, INC.
230 East Ohio Street, Chicago

PRODUCTS *for* DEALERS

Electric Shear for Sheet Metal

The portable electric shear shown in the accompanying illustration has recently been announced. This shear is listed as produced in two sizes; namely an eighteen gauge and a sixteen gauge shear.

The shearing action in this device is accomplished, it is pointed out, by the rapid reciprocating action of a vertical blade against a stationary horizontal blade, set in a special shoe which indicates the correct cutting angle and adapts the tool to all types of cutting work. The unit is described as full ball-bearing equipped (except the eccentric which is steel on phosphor bronze), and powered with a universal motor, operating on either alternating or direct current. Smooth, streamlined aluminum housings used on the shears, are said to eliminate all obstructions and unnecessary weight and make the shear more compact and easy to use. It is indicated the shear will cut all types of sheet metal quickly, easily and accurately; will cut on a radius as small as ¾ in. and easily follows a straight or patterned line.

This new shear is announced by The Black & Decker Mfg. Co., Towson, Md.

Aerating Faucet Spout End

The accompanying illustration shows a faucet spout end recently announced. It is pointed out all of the company's swing-spout sink faucets are now available with these new spout ends.

One of the outstanding features listed for the spout end is that even with the stream at maximum volume and at high pressure splashing is eliminated as the stream spreads on the sink bottom or on other surfaces. Because it aerates the water which passes through it, it is indicated foreign tastes and odors such as chlorine or sulphur are neutralized. It is further pointed out that clean water passed through this spout end is relieved of any cloudiness or murkiness and the "feel" of the water is described as considerably improved.

This new faucet spout end is announced by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill.

Electric Shear
Right, Spout End

YOU *Need* THE HOWE FLOW SWITCH

THE HOWE Flow Switch is for indicating flow or lack of flow in piping for acid, air, cooling, gas, oil, process, refrigeration, steam, steam return, water, and settling tanks.

The HOWE Flow Switch has many applications in all types and kinds of piping systems. It can be furnished for any pressure, temperature up to 700° Fahr. and for horizontal or vertical use.

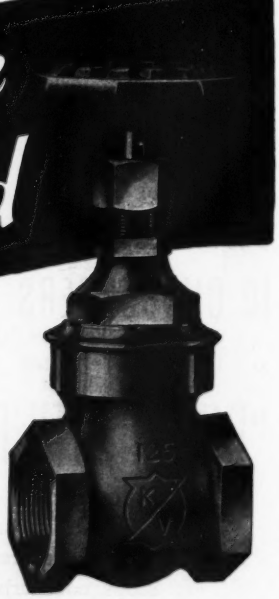
The HOWE Flow Switch can control any type electrically operated compressor or pump, motorized or solenoid operated valve; operate any type or kind of an alarm or signal, or it can be used in connection with a float to maintain a required level.

The HOWE Flow Switch is approved by the Factory Mutual Laboratories of Boston, Mass. and the Underwriters' Laboratories of Chicago, Ill. for alarm use in connection with automatic sprinkler and/or stand-pipe systems.

Send for description. It will give you ideas that will be of service to your customers.

HOWE ELECTRIC COMPANY
53 W. JACKSON BLVD. CHICAGO, ILLINOIS

Triple Tested



1st—for tightness of body
2nd—for tightness of disc and seats
3rd—for tightness of re-packing seats

These three tests — made at far higher than rated pressure—are applied to every Kennedy Valve, in addition to inspection for accuracy and finish of machine work and smoothness of operation.

Write for Catalog

The Kennedy Valve Mfg. Co., Elmira, N. Y.

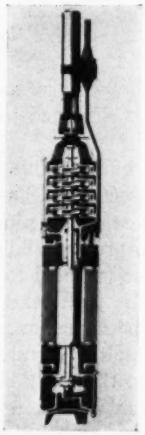
KENNEDY
VALVES-PIPE FITTINGS-FIRE HYDRANTS
BUY KENNEDY PRODUCTS FROM YOUR LOCAL DEALER

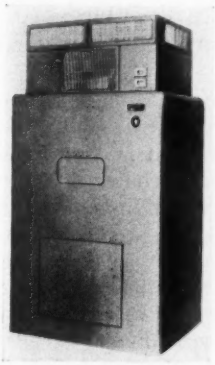
Commercial Conditioner

A self-contained washed air conditioner which has been announced recently is shown in the accompanying illustration. It is designed for commercial use.

This unit is listed as embodying all the well known principles of air washing. A specially designed refrigerating compressor is housed at the bottom of the same cabinet which contains the washing sprays, according to the announcement. Another listed feature of the unit is the entirely new type of intake and discharge header which is used on the top for the delivery of air in three directions, if desired. The model is sold complete with all equipment necessary for year 'round air conditioning. The unit is produced in two sizes, 3-ton and 5-ton capacity.

This new air conditioner is announced by Utica Radiator Corp., Utica, N. Y.





Air Conditioner
Left, Pump Unit

Deep Well Pumping Unit

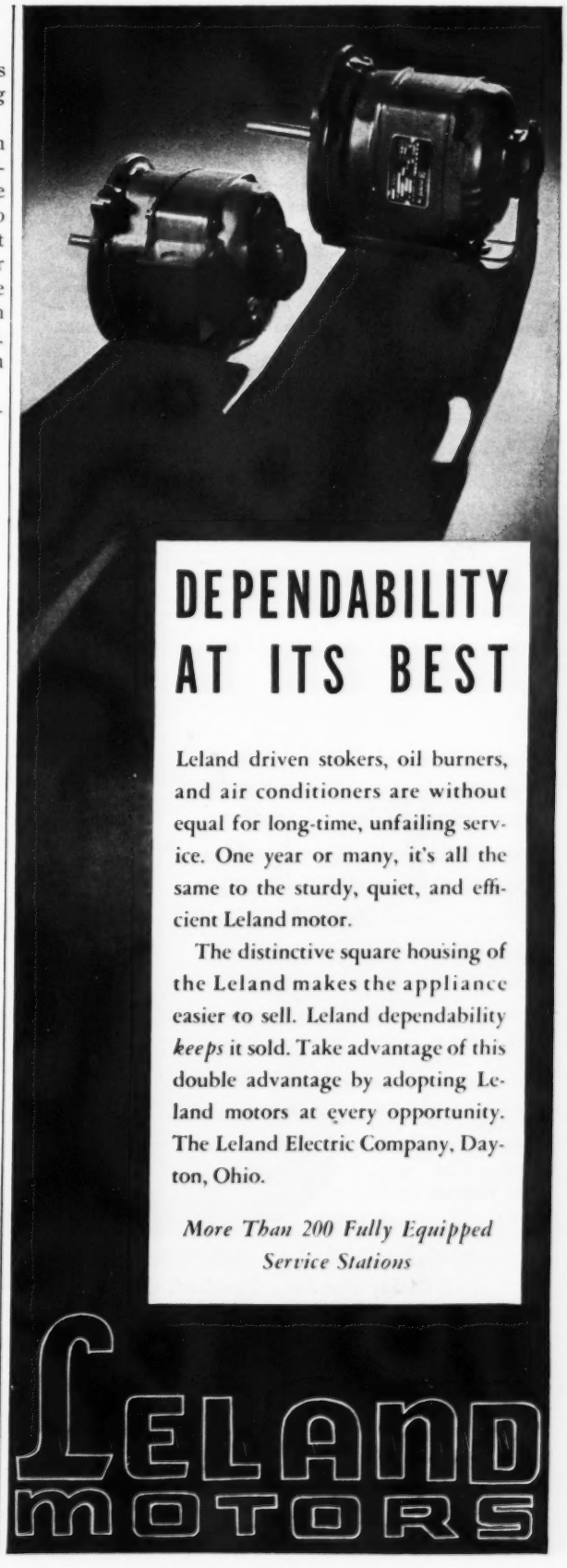
The accompanying illustration shows a deep well pump which has just been announced. It is designed for home, school, farm or institutional use.

This unit consists of a vertical centrifugal pump direct - connected to a submersible vertical motor, according to the announcement. This assembly of pump and electric motor is suspended on the riser pipe, it is pointed out, and operates below water in the well. A cable, listed as water proof conducts the current to the motor. The pump is listed as the centrifugal type with diffusion vanes, built in a varying number of stages to meet requirements. The impellers are listed as made of phosphor bronze. The motor can be furnished for either 50 or 60 cycles, A. C., single or three phase.

This new pumping unit is announced by American-Marsh Pumps, Inc., Battle Creek, Mich.

Straight-Tube Water Heater

The straight-tube water heater shown in the accompanying illustration has just been announced. It is said to be an addition to the company's flow control system.


DEPENDABILITY
AT ITS BEST
Leland driven stokers, oil burners, and air conditioners are without equal for long-time, unfailing service. One year or many, it's all the same to the sturdy, quiet, and efficient Leland motor.
The distinctive square housing of the Leland makes the appliance easier to sell. Leland dependability keeps it sold. Take advantage of this double advantage by adopting Leland motors at every opportunity. The Leland Electric Company, Dayton, Ohio.
More Than 200 Fully Equipped Service Stations
LELAND
MOTORS

BARBER BURNERS

For Gas Appliances

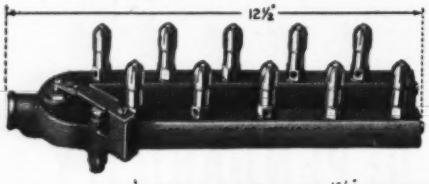
Offer You 3 Things That Count

1. Better Principles of Design
Including the unique Barber Jet—time-tested by 20 years use. Flame temperature 2000° F. on atmospheric pressure. Perfect combustion on every type of gas, including Butane.

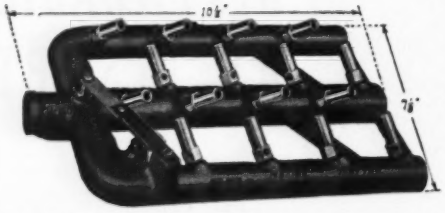
2. Practical Laboratory Facilities
For building and testing burner units correctly adapted to your requirements.

3. A Policy of Real Cooperation with Appliance Manufacturers—
Every problem is a special problem.

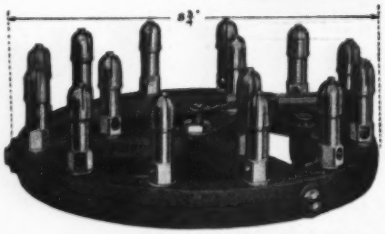
Avail yourself of the complete and improved line of Barber Burner units, gas pressure regulators, and controls. Write for latest catalog and price list.



No. C. U.-90 Barber Burner with Safety Pilot

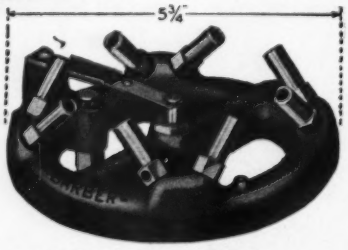


No. P. U.-160 Burner



No. C. P.-150 Burner

No. S. P.-15 Barber Burner



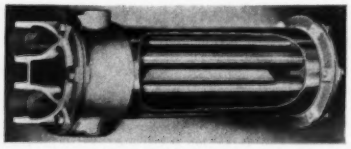
We are Gas Burner Specialists and offer you the facilities of our Engineering Department and Laboratory on your Gas Burner Problems.

THE BARBER GAS BURNER CO.
3704 Superior Ave., Cleveland, Ohio

Address Michigan Inquiries to
The Barber Gas Burner Company of Michigan
4475 Cass Ave., Detroit, Michigan

BARBER *Automatic* JET GAS BURNERS
for Warm Air Furnaces
Steam and Hot Water Boilers
and Numerous Other Heating Appliances

The straight tubes are described as being extremely easy to clean. The heaters may be kept at their original efficiency by occasional flushing and infrequent cleaning. The heater is installed in the highest heat zone. Other



At the left is a new Straight Tube Water Heater

listed features of the heater are as follows: all-copper and bronze construction; light weight and compact; accessible; and strong. These new indirect heaters are described as having a capacity which exceeds by 15 to 20 per cent their nominal rating.

These new straight-tube water heaters have been announced by H. A. Thrush & Co., Peru, Ind.

Portable Vise Stand Combination

The accompanying illustration shows a vise stand combination recently announced. It is designed to be used as a pipe bender and vise.

The unit is described as made of malleable cast iron strongly reinforced with cross-rib sections. The legs are constructed, it is indicated, of 1 in. standard pipe and are fitted with special feet designed to prevent sliding. The feet are drilled so the stand may be fastened to the floor if this is considered desirable. The pipe bender is said to be built in a line with the vise so it may act as a pipe support. Base of pipe only is built integral with the stand, other parts are detachable so they may be ordered separately when needed. The combination is listed as consisting of stand, self-locking vise with full-grip jaws ⅛ to 2½ in., pipe bender, pipe rest, and chain to lock legs when carrying. It weighs 42 lb.

This portable vise stand combination is announced by The Nye Tool & Machine Works, 4120 Fullerton Ave., Chicago, Ill.

Portable Vise Stand Combination

New Soap Dispenser

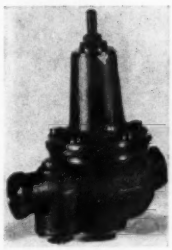
New All-Metal Soap Dispenser

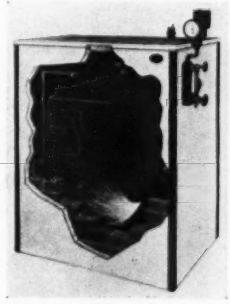
A new all-metal liquid soap dispenser has been announced recently. It is described as embodying modern streamline features of design.

The dispenser is made of non-corrosive materials

throughout, it is indicated, and is positive in action It delivers a measured quantity of soap when the push-button is operated, it is pointed out, and construction is such that under no conditions will the soap run out in a steady stream. These features are indicated as assuring maximum economy. In addition, the all-metal container is pointed out as positively eliminating any possibility of container breakage. The dispenser has an integral bracket for quick, secure attachment to the wall, and the cap at the top is designed to be easily opened for refilling.

This new all-metal soap dispenser is announced by The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago, Ill.





Reducing Valve Right, Boiler

Pressure Reducing Valve

A new pressure reducing valve shown in the accompanying illustration has been announced recently. The function of the valve is to reduce the pressure of either hot or cold water, air, oil and certain gases.

The valve is listed as incorporating four separate and important features; the reducing valve, strainer, shut-off and bypass. It also has a renewable stainless steel seat. The strainer is described as made of monel metal with a perforated surface area 12 times that of the orifice. The shut-off in the valve is listed as making it easier to clean out strainer and make repairs when necessary by shutting off the water at the valve itself. The bypass is said to prevent excess pressure on the outlet side from building up any higher than the inlet pressure.

This new pressure reducing valve has been announced by T-D Specialty Corp., 791 Tremont St., Boston, Mass.

New Domestic Boiler

The boiler shown in the accompanying illustration has been announced recently. It is designed for domestic installation.

This boiler is built upon what is described as a new principal of heat transfer. The heat transfer element or section is a cross-casting, the lower portion of which is designed as an agitator. When heat is applied to the water within the agitator, a violent agitation follows, it is indicated, but the boiler operates noiselessly. The design of the agitator and section permits a high rate of condensation and a low flue gas temperature, with a small amount of exposed heat absorption area, according to the announcement. The jackets of the boiler are

SURE HOT
indirect
WATER HEATERS

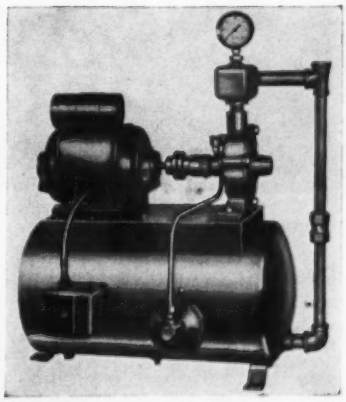
The modern, inexpensive way to heat domestic Hot Water —use SURE HOT indirect Water Heaters. 24 Sizes—Tank Capacities from 30 to 600 gals. Brass connections to copper coil prevents domestic water from contact with iron in SURE HOT. Clean—hot water assured. Install SURE HOT and end hot water troubles.

SURE HOT AIR VALVES in all classes—air and vacuum—factory tested.

SEND for "HEATING SPECIALTIES" Catalog.

The M. S. LITTLE
MANUFACTURING COMPANY
-- HARTFORD. CONN.. U. S. A. --

SAVED BY CASCADE



that customer whose well is over 22 feet deep!

CASCADE TURBINE WATER SYSTEM IS BUILT FOR LIFETIME SERVICE

Here is a simple, compact water system that will handle anything down to a 28-foot lift at sea level. It's a fool-proof, trouble-free system . . . easily installed and easily maintained, because its impeller is adjustable for wear without tearing down pump and because its standard motor can be replaced anywhere. Isn't that the kind of dependable water system to sell your customers?

Ask your jobber for details or write

TRIANGLE MANUFACTURING CO.
4047 Beaufait Avenue Detroit, Mich.
Makers of the famous RATHBUN electric sump pump

listed as made of heavy gauge baked enamel steel.

This boiler is announced by Reif-Rexoil, Inc., 37-41 Carroll St., Buffalo, N. Y., and its subsidiary Coreco Boiler Corp., Buffalo, N. Y.

Seamless Copper Tanks

A seamless copper tank wth a velvet finish has just been announced. It is shown in the accompanying illustration.

These tanks are described as constructed of one-piece of copper, built up by a special electro-deposit process. It is pointed out in the release that there are no weak spots where leaks can develop when this type of construction is used. These tanks are available in 25, 30, 40, and 50 gal. capacities, in standard, extra heavy and double extra heavy types.

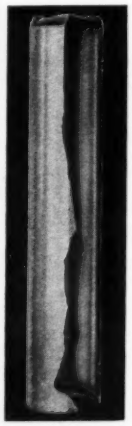
These new satin finish copper tanks are announced by Victor Mauck Seamless Copper Tank Co., Norristown, Pa.

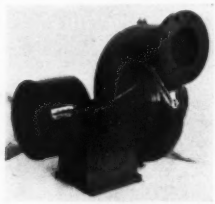
Centrifugal Pump Line

A complete new line of single stage, side suction, ball bearing centrifugal pumps has just been announced.

There are eighteen sizes of pumps listed for this line, with rated capacities from 5 to 1800 g.p.m. against heads up to 110 ft. for flat or v-belt or direct motor drive. The most modern hydraulic design is embodied in casings, impellers and stuffing boxes, according to the announcement. It is further pointed out that structural strength and amply proportioned parts are there without excess weight. The casing of the pump is of cast iron, with suction and discharge openings cast integral, and with well rounded, smooth liquid passages. The impeller is of cast iron, side suction, enclosed type, properly balanced, it is pointed out, to eliminate vibration.

This new line of centrifugal pumps is announced by Gould Pumps, Inc., Seneca Falls, N. Y.





Above is shown a new centrifugal pump

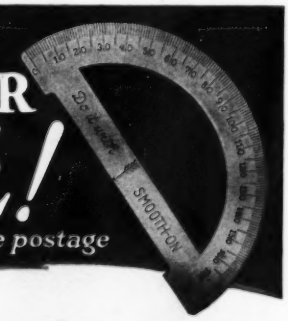
A new seamless copper tank is shown at left

ASSISTANCE

When certain technical problems cause you to scratch your head in wonderment, see the responsible plumbing and heating jobber in your community. He has the data you need and will gladly pass it on to you.

Kuhns Brothers Co.
Malleable Iron Fittings Co.
K MIF

THIS USEFUL PROTRACTOR FREE!
— and we pay the postage



THIS handy accurate tool and a copy of the new 32-page condensed Smooth-On Handbook will come to you by return mail and absolutely free if your request is mailed within 60 days from the appearance of this offer.

Judicious use of Smooth-On for stopping leaks and making loose parts tight, as recommended in the Smooth-On Handbook, is saving thousands of dollars for plant owners, and untold hours of hard dirty overtime work for the operating men. You overlook an opportunity if you do not avail yourself of its benefits.

Get Smooth-On in 1 or 5-lb. can or larger steel pail from your dealer or if necessary direct from us.

SMOOTH-ON MFG. CO.. Dept. 12
570 Communipaw Ave., Jersey City, N. J.

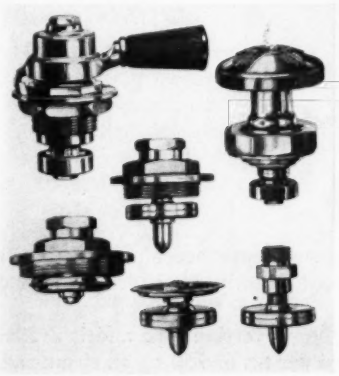
Do it with SMOOTH-ON

Flueless Boiler-Burner Unit

The boiler-burner unit shown in the accompanying illustration has just been announced. It is designed for domestic installation.

It is pointed out that combustion takes place primarily inside the shell at the bottom, passes upward through the center passageway, spreads out in all directions on top of the shell, then downward completely around the shell to the bottom where it is then directed toward the bottom rear where the stack connection is located. It is described as basically a flueless type of boiler consisting of a rolled inner and outer shell containing stamped heads and a center passage all electrically welded together and tested at three times normal maximum operating pressure. Among the features listed for the unit are the following: (1) complete boiler surface used as efficient heating surface; (2) double insulation; (3) low water line; (4) extremely quiet operation.

This new boiler-burner unit is announced by The Century Engineering Corp., Cedar Rapids, Iowa.



Radiator Replacements

New Boiler Unit

Trap Adaptors and Replacements Elements

Shown in the accompanying illustration are six new trap adaptors and bonnet replacement elements which, with several others, have been announced recently.

Reading from left to right, top to bottom these units are: (1) bonnet replacement for valve bodies having outside threads; (2) trap adaptor element with cover; (3) bonnet replacement for valve bodies having outside threads; (4) trap adaptor element with cover; (5) and (6) elements only. It is indicated these units and several others enable a complete changeover to be made on practically any type of steam, vapor or vapor-vacuum heating system at present in operation.

These new thermostatic trap adaptors and replacement elements are announced by Milwaukee Valve Co., Milwaukee, Wis.

Tankless Heater With Manifold

The tankless heater shown in the accompanying illustration has been announced recently. It is designed for use in conjunction with sectional boilers for steam heating systems.

RUGGED
SIMPLE
EFFICIENT
ADAPTABLE

Gardner-Denver Sewage Centrifugal

—The New Gardner-Denver Sewage Pumps

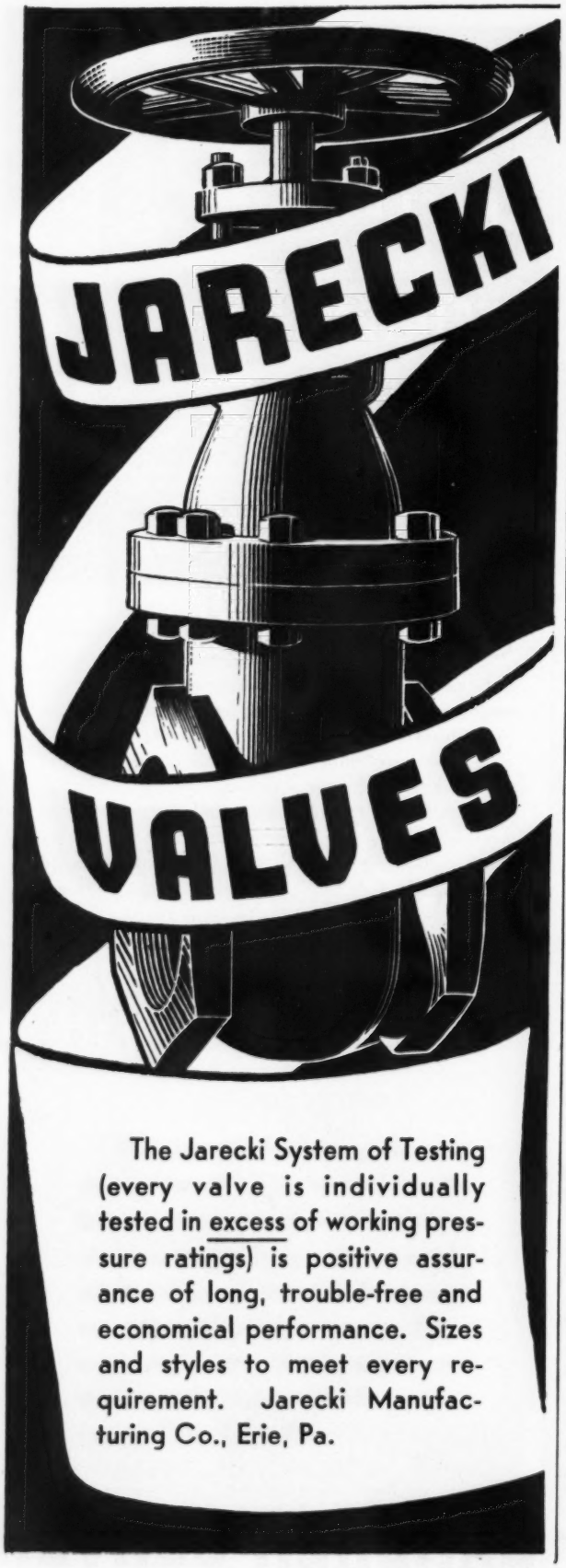
GARDNER-DENVER—designer of "tomorrow's pumps today"—has built these new centrifugals to fill all four of the primary requirements of hydraulic engineers and plant owners. These pumps have the ruggedness to withstand the service of unattended automatic installation. They are simple in construction for ease of maintenance and operation. They are highly efficient, to hold power and driver costs at a minimum. They are adaptable—for use wherever fluids containing solids or stringy substances are to be pumped.

Find out how these new Gardner-Denver centrifugals can lower *your* pumping cost. Write us for complete information.

GARDNER-DENVER COMPANY
Quincy, Illinois *Since 1859*

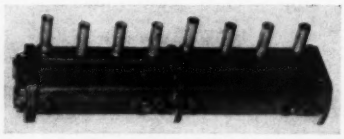
Gardner-Denver Sewage Centrifugal—Horizontal Mounting

GARDNER-DENVER

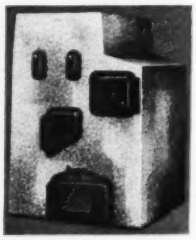

JARECKI
VALVES
The Jarecki System of Testing (every valve is individually tested in excess of working pressure ratings) is positive assurance of long, trouble-free and economical performance. Sizes and styles to meet every requirement. Jarecki Manufacturing Co., Erie, Pa.

It is pointed out that each section of the steam boiler is connected to the casing of the heater. This increases the efficiency, it is indicated, by having water flow directly from each section of the steam boiler to the casing of the tankless heater instead of through piping. Another listed feature of interest is the ample spacing between the tubes which allows the entire surface of the tubing to become heated immediately.

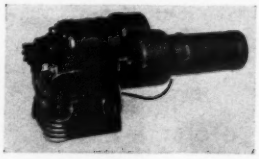
This new tankless heater with manifold has been announced by Standard Heater & Oil Equipment Co., 245 Cornelison Ave., Jersey City, N. J.



New Tankless Heater



Direct Fired Heater



New Oil Burner

Conversion Type Oil Burner

The oil burner shown in the accompanying illustration has been announced recently. It is designed for domestic use.

This burner is of the conversion type and is available in capacities of 2½ gal per hr. or 750 sq. ft. steam radiation. It is described as being equipped with pressure regulating and cut-off valves and an oil filter. Air regulation in the burner takes place at the outlet of the air tube. It also has a specially developed drive coupling, according to the announcement.

This new conversion type oil burner has been announced by Branford Oil Burner Div., Malleable Iron Fittings Co., Branford, Conn.

Direct Fired Heater

Recently announced is the warm air furnace shown in the accompanying illustration.

This furnace is of the magazine feed type, it is indicated, fuel feeding by gravity, automatically and constantly, regulated to deliver the correct quantity of fuel necessary to produce a steady, even heat. The furnace is described as made of cast-iron, designed in such a manner as to eliminate hot spots. Where the furnace walls come together the joint is covered with flexible aluminum it is pointed out. When the cast-iron walls expand or contract this flexible joint is designed to counteract the expansion or contraction.

This new warm air furnace is announced by Spencer Heater Division, Williamsport, Pa.

New Information and Aids to Sales

Copper Tubes Catalog

"Anaconda Copper Tubes and Fittings for Heating Lines," is the title of a 28 page catalog recently issued by The American Brass Co., Waterbury, Conn. The introduction to the booklet contains a listing of the features of the copper tubes, methods of pipe sizing and a directory to the pages following. Suggested procedure for various uses of the tubes, tables of carrying capacities, drawings of piping layouts, installation photographs, description of fittings and a chapter on heat losses of copper tubes are included. Procedure to follow in assembling the fittings is embodied in three of the pages. The book measures 8½ by 11 in. and is printed in two colors.

Boiler Controls Literature

Addressed to heating contractors and oil burner dealers are two new pieces of literature issued by McDonnell & Miller, Wrigley Bldg., Chicago, Ill. The first of these pieces is a 3½ by 6¼ in., eight page folder telling about the company's line of boiler water level control. These—according to the announcement—will be furnished by the company to the heating contractors and oil burner dealers who wish to distribute them to their prospective customers. The other piece of literature is a condensed catalog and price list (effective Oct. 1, 1937). This folder contains four pages, printed in two colors, with an insert, printed on one side of the paper, which contains prices for certain of the company's products.

FHA Remodeling Check Sheet

Recently prepared by American Radiator Corp., 40 West 40th St., New York City, to help contractors and dealers in figuring the cost of modernization jobs, has been a new sheet titled "Modernization Survey." Complete information can be entered to show what the prospect requires to modernize his heating plant. For example, the upper part of the sheet is divided horizontally into five sections, which contain questions to be answered by the dealer when contacting the prospect on: first, the type of building and its particular heating problems; second, the type heating system and reminders of the various accessories needed for complete heating service; the condition of the boiler, furnace, flues, piping and ducts, and the facilities for providing domestic hot water. A table at the bottom of the sheet provides space for room and radiation measurements. Users will find this helpful in checking the needs of customers and prospects, particularly for modernization work under the new FHA.

Let Us Tell You About the 10 Points of Better Quality In This Laundry Tray

Ten points of better quality make this Laundry Tray sell better and keep your customers satisfied.

For example—Point No. 1 is the washing accessory shelf cast integrally into the back—extending the full length of the tray. It is roomy enough to hold all washing accessories.

Point No. 2—but let us give you all ten of the points.

WRITE—

D. D. WESSELS & SONS CO.
1625 EUCLID AVE. EAST
DETROIT, MICHIGAN

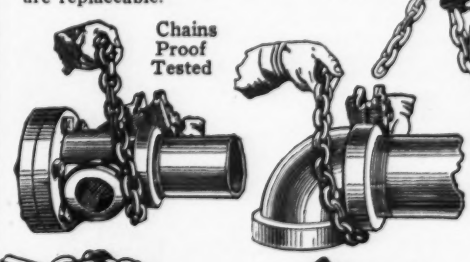
Look for the Arm-and-Hammer

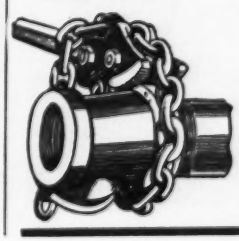
ARMSTRONG BROS.

The Ideal Wrench

Made exclusively by ARMSTRONG BROS. truly ideal for all around uses. Jaws have two biting surfaces. Straight for pipe, "V" for fittings, valves, and narrow or irregular surfaces—takes a 2-point hold on any surface. Extended radius (rocker shape) of jaws take up all chain slack. Jaws are drop-forged from special steel, are hardened, tempered and tested for wearing qualities. All parts are replaceable.

Chains Proof Tested





Chains replaceable instantly with link for screwing flanges.

Write for Circular and Pipe Tool Catalog P-35

ARMSTRONG BROS. TOOL CO
"The Tool Holder People"
323 N. Francisco Avenue Chicago, U. S. A.
Eastern Warehouse and Sales: 199 Lafayette St., New York
San Francisco London

Water Systems Catalog

Sixty-four, 8½ by 11 in. pages are included in a catalog recently issued by A. Y. McDonald Mfg. Co., 12 and Pine Sts., Dubuque, Iowa, on the company's line of water systems. The catalog is printed in three colors. Among the items described in the booklet are shallow well water systems, shallow well pumps, engine driven pumps and systems, deep well pumps and systems, and accessories. The booklet is liberally illustrated and tables of capacities and dimensions are included. Specifications for the different units are given on each page and distinctive features of the line as a whole are inserted at strategic points in the book.

FHA Sales Kit

A special FHA time-payment kit has been made available by American Radiator Co., 40 West 40th St., New York City. This kit will include a booklet explaining in detail the special plan of the Heating and Plumbing Finance Corp., subsidiary of American Radiator Co.; a supply of special time-payment forms, simplified by Heating and Plumbing Finance Corp. from the more complicated Government form for use on modernization jobs up to $2,500; modernization survey sheets to aid in securing jobs; and six mats for small-space, local newspaper advertising, featuring modernization of homes on FHA terms.

Induction Motor Folder

Century Electric Co., St. Louis, Mo., has just issued a four page folder describing the company's line of automatic start induction polyphase motors. The folder measures 8½ by 11 in. and is printed in two colors. Detailed description of featured parts of the motor such as frame and end brackets, bearing, cores and windings are given and a table of characteristics is included. Outline halftones illustrate the folder.

Steam Line Conduit Literature

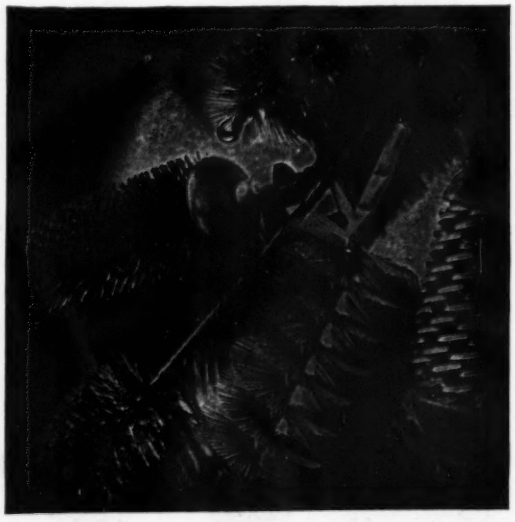
"Air-Stone Conduit for Underground Steam Lines" is the title of a new folder issued by S. E. Dockstader, Munsey Bldg., Washington, D. C. The folder measures 3⅞ by 8⅞ in. Three illustrations of the conduit are shown. The descriptive material relates the ease with which the conduit may be installed and the permanency with which the installation is endowed. Characteristics of the material with which it is made are given, and recommendations to be followed in obtaining the best results with the product are included.

Water Pump Literature

American-Marsh Pumps, Inc., Battle Creek, Mich., has issued recently a new catalog devoted to its deep

Sarco is the Low Pressure Steam Trap
...That will test hydrostatically without damage up to 75 lbs.
...and has heavy wall helically corrugated bellows—rugged and durable.
...That is manufactured in a new and thoroughly modern plant devoted exclusively to steam heating specialties.
Install Sarco traps, valves, regulators, and accessories. Get the protection of unit service and responsibility on one order.
SARCO TYPE H RADIATOR TRAP
ASK FOR THIS NEW DATA BOOK
—On your business letter-head. Shows how to hook up all types of heating, air conditioning and process equipment with suitable traps and control.
STEAM HOOK UPS
SARCO
COMPLETE SYSTEMS FOR HEATING AND INDUSTRY
SARCO
THERMOSTATIC, FLOAT AND BUCKET TRAPS, REGULATORS, AND HEATING SPECIALTIES
SARCO COMPANY, Inc., 183 MADISON AVENUE, NEW YORK, N. Y.
SARCO CANADA LIMITED, FEDERAL BLDG., TORONTO, ONT.

Made for Long Rugged Service



Boiler Tube Cleaners, Flue Brushes, Wire Heater Brushes, Handy Cleaner Brushes, Fire Brooms, Track Brooms.

Tempered Steel
The Worcester line is complete.
Catalog gladly sent upon request.

WORCESTER BRUSH and SCRAPER CO.
10 AUSTIN STREET WORCESTER, MASS.

well centrifugal pumps. This folder entitled, "Deep Well Centrifugal Pumps for Industrial Service," contains four pages and is printed on 8½ by 11 in. paper, in two colors. One of the illustrations in the booklet shows the internal construction of the unit and the parts are named on this same view. Features of the unit as a whole are listed and features of several of the more outstanding details are given.

Sump Pump Sales Kit

The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago, Ill., has just issued a packaged sales kit for aiding plumbing and heating contractor-dealers in making sump pump sales. The kit contains these sales helps: (1) "How to Sell Sump Pumps", (2) How to Keep Your Basement Dry"—a folder for the home owner, (3) sample of card to be mailed to home owners, (4) proofs of two newspaper advertisements for local use, (5) sample of imprinted handbill for distribution to home owners, (6) new bulletin on the company's floatless sump pump, and (7) reprint of an article from DOMESTIC ENGINEERING.

FHA Finance Plan Booklet

Heating and Plumbing Finance Corp., Div. of American Radiator & Standard Sanitary Corp., 37 W. 39 St., New York City, has just issued an eight-page booklet entitled "The Better Finance Plan for Better Housing". Features of this plan are described in the fore part of the booklet. Next comes an explanation of how the plan works. This section contains a rate chart with another explanation of the chart itself. In this section sample forms are filled in with a typical case being used as an example. Then a section entitled "Be Sure to Follow These Directions" is included.

Pipe and Boiler Compound Folder

A quadruple folded broadside has just been issued by Sulflo Corporation of America, 701 Spring St., Elizabeth, N. J. This piece of literature, printed in three colors, is devoted to a description of the pipe joint compound, boiler leak stopping compound, cutting oil and soldering paste manufactured by the company. Direction for the use of the boiler compound is given. A price list of the four products is included on the back page of the folder.

Welding Booklet

Recently issued by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been a booklet entitled "New Profits From Resistance Welding With Ignitron Split-Second Control". This booklet measuring 8½ by 11 in., is printed in two colors and bound in a separate heavy-paper cover. A complete description of the process and the materials and methods used in it are given.

Look! a new RIDGID

Guaranteed Stronger and Safer than Ever!

Here's a tool for you expert pipe wrench users who can't be fooled by shiny metal and ordinary guarantees —the new all-alloy RIDGID with new design stronger housing and I-beam handle that adds still more strength to the famous unconditional guarantee.

It practically stops your pipe wrench repair bother and expense.

With its replaceable no-slip, no-lock chrome molybdenum jaws and unbreakable housing, you've got a wrench you can depend on for any job, in any emergency. Add the pleasure of an adjusting nut that spins freely in all sizes, 6" to 60", a handy pipe scale on the full-floating hook jaw, handle that's comfortable to your hand on a hard pull, and you see why RIDGID is the wrench millions enjoy owning and using.

Buy from your Jobber.

THE RIDGE TOOL CO.
ELYRIA, OHIO, U. S. A.

A Work-Saving Tubing Cutter

This remarkable little RIDGID tool smooths the tube for soldering as it cuts it. Integral reamer is handy and efficient. Ask your Jobber to show you.

Hank Sez

They're Still

Lying About It

Cutaway view of our Oil Burning Boiler showing the heat grabbing teeth that chew up 1600 degrees of heat in 19 inches of vertical fire travel.

You've noticed as how when some folks—smart ones too—can't just figure out *why* a thing *is*, they plumb say it *ain't*.

Now take that boiler of ourn, that wuz made to burn oil and nothing else. To some, it just doesn't sound like sense, that any boiler can do in 19 inches, what it takes others a lot of feet to do.

Even that wouldn't be so alfired queer, just by itself. The thing that's so hard for some to take, is that those 19 inches of Burnham fire travel, outsmart all the feet in the others. So just natcherly, they up and say, we are a passel of cheerful liars.

Supposing we wuz—which we ain't—how do you account for those who buy these Burnhams, doing such a power o' bragging about the oil they're saving?

But who are all these braggers, you ask? To which I reply. Just let us know who you are, who's a-doing the asking, and we'll do a-plenty of replying. The kind no one yet has been able to laugh off. Which is about enuff for now.

Hank Hindle

BURNHAM BOILER CORPORATION
Manufacturers of Heating Equipment Since 1873
IRVINGTON, NEW YORK ZANESVILLE, OHIO
Export Department
116 Broad Street, New York City

Burnham Boiler

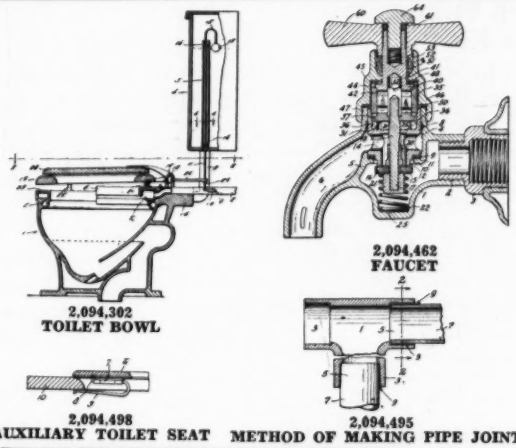
NEWS *of* PATENTS

Plumbing

2,094,302. Toilet Bowl. Allen Priess, Hermann, Mo.

2,094,462. Faucet. Gustave Mueller, Cleveland, Ohio, assignor to Alfred E. Tomlinson, Shaker Heights, Ohio.

2,094,498. Auxiliary Toilet Seat. Clarck E. Saunders, San Jose, Calif.



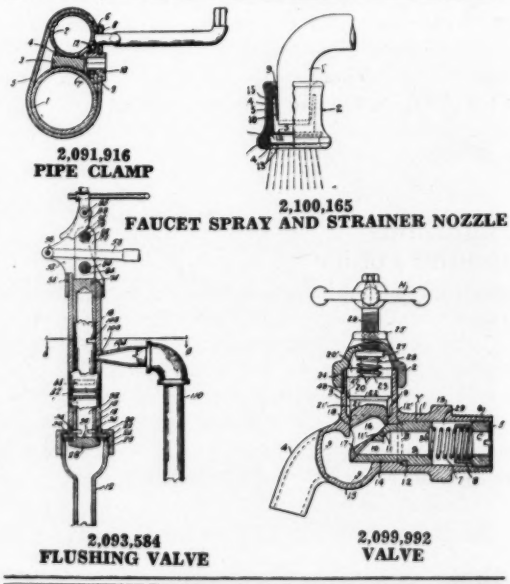
2,094,302 TOILET BOWL

2,094,462 FAUCET

2,094,498 AUXILIARY TOILET SEAT

2,094,495 METHOD OF MAKING PIPE JOINTS

2,094,495. Method of Making Pipe Joints. Ward M. Robinson and Harold K. Rader, Decatur, Ill., assignors to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan.



2,091,916 PIPE CLAMP

2,100,165 FAUCET SPRAY AND STRAINER NOZZLE

2,093,584 FLUSHING VALVE

2,099,992 VALVE

2,100,165. Faucet Spray and Strainer Nozzle. August W. Holmberg, Brooklyn, and Centre W. Holmberg, New Rochelle, N. Y.

2,091,916. Pipe Clamp. Seth Evans, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Texas.

2,099,992. Valve. Nathaniel Sutcliffe, Newark, N. J.

2,093,584. Flushing Valve. Hugh J. Walker, Woburn, Mass.

Questions—

(Continued from Page 42)

the expiration date of the lease. It should also contain sufficient specific information as to the purposes for which the proceeds of the loan are to be used to enable the insured institution to determine whether there is a violation of regulations governing the eligibility of a Title I loan.

The second group of questions and answers refers to various aspects of Title II, which covers new construction. This Title of the Act is in force and we have been led to understand that it will go into operation and loans will be made in the very near future.

Q.: Is the Act now in force so that those who wish to build or modernize actually may receive loans under the Act's provisions?

A.: Title I, referring to modernization and construction of small structures, now is in force and loans already have been made. Title II we are told will be in actual operation and loans available very shortly.

Q.: What inducements are there in the Act for the home building and modernization prospect to act now?

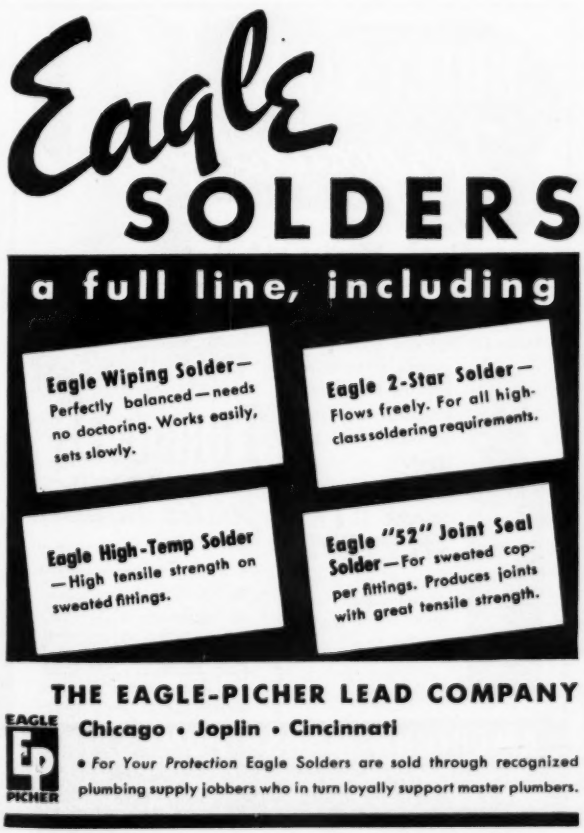
A.: Title I of the Act, unless extended, will last only until July 1, 1939. For new construction under Title II, the length of the loan will drop from 25 to 20 years after July 1, 1939 and the loan insurance premium will be increased from ¼ of 1 per cent to ½ of 1 per cent after that date.

Q.: On loans made for new construction under Title I what plumbing specifications must be complied with in order that the loan shall be eligible for FHA?

A.: In regard to water supply, when public water supply is available connections shall be made to water main; when public water supply is not available a private water supply shall be on the property and may be a drilled, driven or dug well or a natural spring. In regard to sewage disposal, when public water supply and public sewers are available a bathroom shall be provided and running water shall be piped and connected to all fixtures and the kitchen sink and connections shall be made to public sewer main. When public water supply is available and a public sewer is not available, a bathroom shall be provided and running water shall be piped and connected to all fixtures and the kitchen sink and a cesspool or septic tank shall be installed; when public water supply is not available the previously mentioned requirements are not applicable.

Q.: May an insured institution pay the proceeds of a note either in full or by installments to the contractor, supplier or anyone else to whom it is directed by written authorization of the borrower that payment be made.

A.: Yes, in fact in many cases, this would be considered good practice to make sure that the proceeds are being used for eligible purposes as agreed. In such cases, written authority signed by the borrower must first be obtained in addition to the installation or completion certificate.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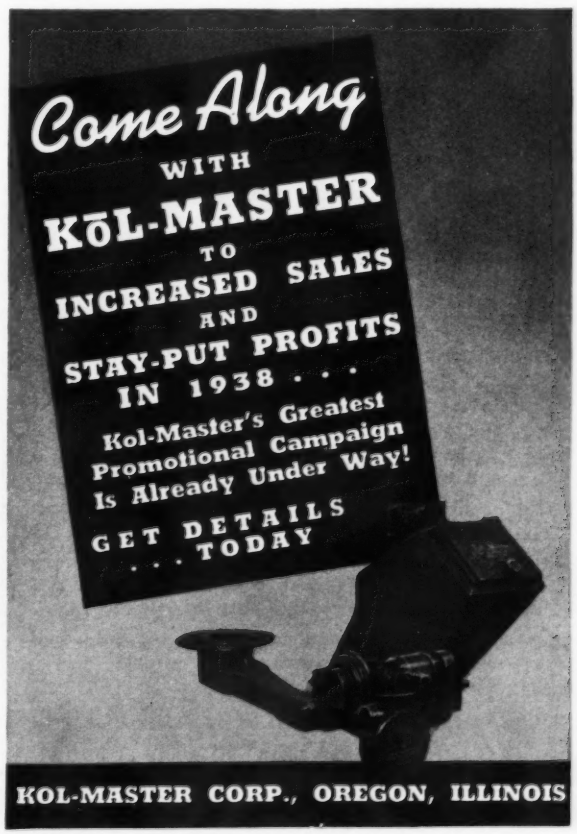


Fuel Saving—

(Continued from Page 55)

ing season temperature is 43 deg. Fahr.

In Fig. 1 the horizontal coordinate is time of day. The vertical coordinate is the temperature scale on which the inside and outside temperatures are shown. Since we are discussing the average condition, the outside temperature will be shown as a horizontal line A B at 43 deg. Fahr. The inside temperature will be the line C D E F G. Note that the thermostat has been set back to 60 deg. Fahr. at 10:30 P. M., but in this hypothetical case the room temperature drops only to 61 deg. Fahr. by 6:30 the next morning when the thermostat is again set up to 70 deg. Fahr., point E. Note, too, that the 70 deg. Fahr. room temperature is not attained until 8 A. M., point F, with this particular installation.

FUEL SAVING ESTIMATES

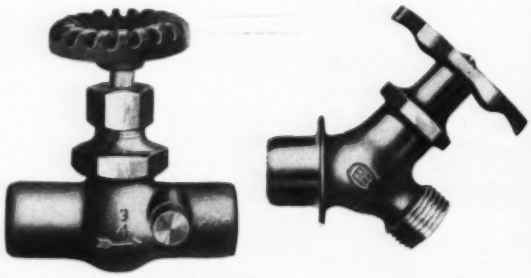
Most estimates of fuel saving due to night set back of thermostat have, in effect, been based on the assumption that the room temperature drops as soon as the thermostat is set back, and further, that it increases to the higher level, as soon as the thermostat is set up.

The magnitude of the saving is actually obtained by comparing the two areas B A C D E F G and B A C D F G, which is the same thing as comparing the average ordinate between the line A B and the line C D E F G and the average ordinate between the lines A B and C D F G. By measurement, the area of B A C D E F G is found to be approximately 93 per cent of the area B A C D F G, which means that with the average outside temperature of 43 deg. Fahr. and an average inside temperature pattern as assumed, the saving would be about 7 per cent. Since we are dealing in average inside and outside temperatures, the yearly saving can also be said to be about 7 per cent under the conditions assumed.

AVERAGE INSIDE TEMPERATURE

The true average inside temperature must actually be determined in making an estimate of the saving. This can only be done experimentally since each house is a problem of its own. Temperature recorders must be resorted to and for extreme accuracy they would have to be used throughout the heating season. A good approximation of the average night temperature can be gotten, however, by the use of the recorder on a night which has an average temperature which is approximately the same as the average for the entire heating season.

For example in order to determine the average night temperature pattern for a given house in the vicinity of Washington, D. C.; the recording thermometer could be installed during several nights when the temperature averaged approximately 43 deg. Fahr. The diagram corresponding to the one shown in Figure 1 would probably be close enough to that for the average of the whole season to serve for all practical purposes.



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The COMPRESSION LAWN FAUCET has ample soldering sleeve—encased compression disc. Finished in rough nickel. Wheel handle or loose key.

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Water Heaters—

(Continued from Page 57)

committee. They met on January 27 in New York City with H. E. Dexter and J. H. Hawley of the A. G. A.

That the San Francisco, Calif., master plumbers are water heater sales-minded, was indicated at a meeting February 18. A highlight was a talk by L. J. Kruse, president of the N. A. M. P. He indicated that there is more to the continued successful expansion of the water heater market generally than selling alone. "If selling can not be made profitable in the face of the price structure and sales conditions, then selling will not be continuous," said he.

"The master plumber's interest is primarily in the constant, profitable expansion of his business in gas appliances. Such expansion is predicated on three elements: (1) that the master plumber purchase on terms of parity with his competitors; (2) that, since the master plumber has no 'long profit' item to sell in conjunction with water heaters, the water heater must stand on its own feet as a profit-maker; (3) that the master plumber should enjoy the same degree of financial accommodation and sales promotion effort as is enjoyed by his competitors."

A potent sales aid emphasized by speakers was the new FHA terms, under which heaters may be purchased for modernization with no down payment.

A skit showing various angles of the national water heater prize campaign was staged at the meeting. E. K. Ross of the water heater group urged: "Let's sell the better heaters. Not only does this mean more to you in many ways, but to the consumer it means greater satisfaction. And that helps you."

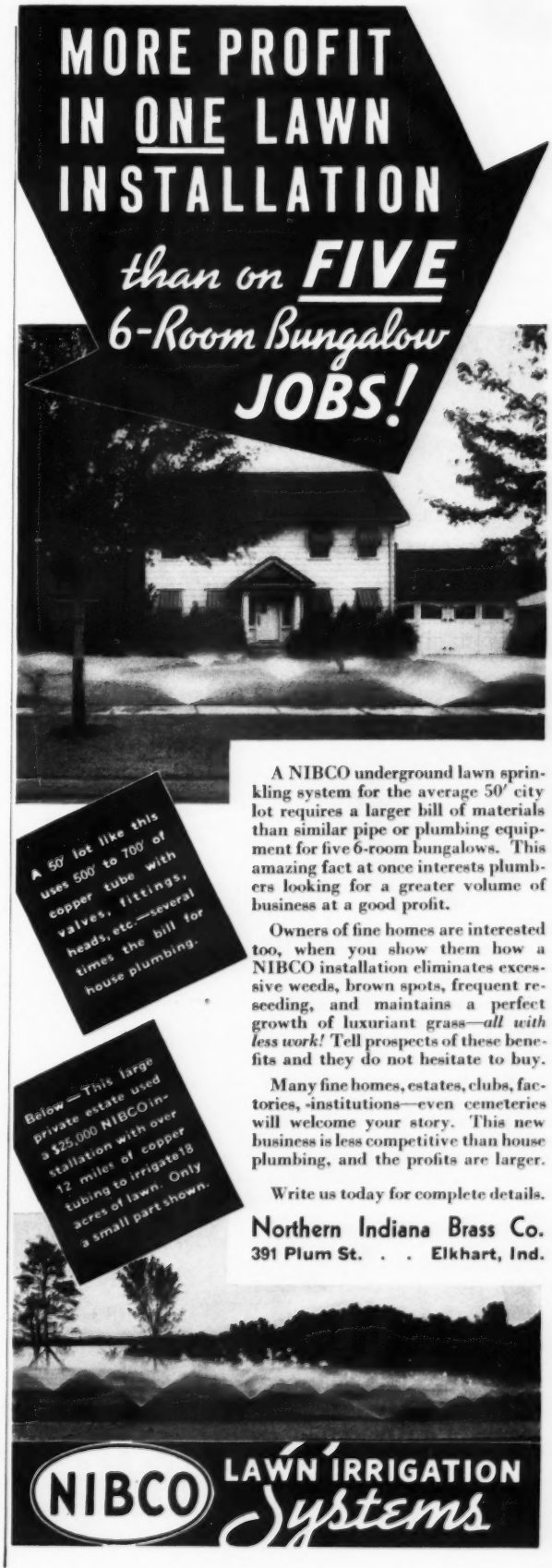
It is interesting to see how a progressive and resultful local agreement fits into the broader framework of the national recommendations. The Chicago agreement, under which contractor-dealers have been showing profits since it was put in force February 1, 1935, furnishes an example. The main points follow, in brief:

(1) The installed rental purchase price will be the manufacturer's established cash price plus a finance charge of 15 per cent. Down payments will be as low as $1.00, and the monthly rental payments as low as one-sixtieth of the remaining balance.

(2) All automatic water heating equipment must carry the seal of approval of the A. G. A. Laboratory, and be equipped with a thermostat, safety pilot, down draft diverter and pressure or temperature and pressure relief valve.

(3) Any plumbing contractor acting in the capacity of agent for one or more of the manufacturers co-operating with The Peoples Gas Light and Coke Company may take a rental purchase contract from any residential customer of the company. The manufacturer, after approving the credit of the customer and accepting such contract, will furnish an automatic water heater to be installed by the plumbing contractor and subsequently pay him for making the installation and for the cost of city permit. The manufacturer will also pay the plumbing contractor a commission for obtaining the contract.

The amount of money to be paid to the plumbing contractor by the manufacturer for installation and city per-


MORE PROFIT IN ONE LAWN INSTALLATION
than on FIVE 6-Room Bungalow JOBS!
A 50' lot like this uses 500' to 700' of copper tube with valves, fittings, heads, etc.—several times the bill for house plumbing.
Below—This large private estate used a $25,000 NIBCO installation with over 12 miles of copper tubing to irrigate 18 acres of lawn. Only a small part shown.
A NIBCO underground lawn sprinkling system for the average 50' city lot requires a larger bill of materials than similar pipe or plumbing equipment for five 6-room bungalows. This amazing fact at once interests plumbers looking for a greater volume of business at a good profit.
Owners of fine homes are interested too, when you show them how a NIBCO installation eliminates excessive weeds, brown spots, frequent reseeding, and maintains a perfect growth of luxuriant grass—all with less work! Tell prospects of these benefits and they do not hesitate to buy.
Many fine homes, estates, clubs, factories, institutions—even cemeteries will welcome your story. This new business is less competitive than house plumbing, and the profits are larger.
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NIBCO LAWN IRRIGATION Systems

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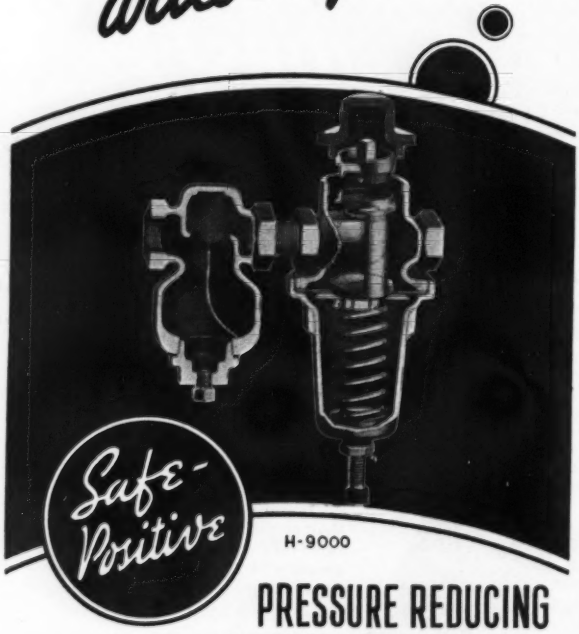

PRESSURE REDUCING & REGULATING VALVE

The Mueller Pressure Reducing and Regulating Valve is especially adapted for residence, apartment building, and industrial service. It reduces water bills, plumbing noises, prevents splashing at faucets, assures full, constant pressure and reduces repairs to the fixtures on the system.

The dependability of these valves has long been recognized because of their advanced construction. They have a seat opening in proportion to the inlet so they can supply full volume at the required reduced pressure. The extra large diaphragm insures sensitive operation and the heavy brass body and brass working parts mean long trouble-free service.

There are sizes from ¼" to 2½" with pressure ranges to deliver from 5 to 125 lbs. from initial pressures of 45 to 250 lbs. Always specify MUELLER!

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VITAL SPOT PRODUCTS

mit shall not be more than the following: storage capacity of 35 gallons or less $20.00; storage capacity of 36 gallons or more $25.00; instantaneous automatic water heaters $25.00.

In the event that the cost of installation and city permit is in excess of these amounts, the difference will be collected from the customer by the plumbing contractor.

All rental purchase contracts for automatic water heaters will be assigned to The Peoples Gas Light and Coke Company by the manufacturer and after credit approval will be billed to the customer on his regular monthly gas bill.

(4) The Peoples Gas Light and Coke Company will pay a bonus equal to 20 per cent of the manufacturer's established cash price to any plumbing contractor who sells an automatic water heater to, and installs for, any gas consumer of the company providing, however, that it is connected and used within the city limits of Chicago, and providing further that the sale is a cash or a deferred payment sale, not financed or billed the The Peoples Gas Light and Coke Company.

(5) The plumbing contractor will furnish the water heating division of The Peoples Gas Light and Coke Company full information in writing pertaining to the sale and installation of the automatic water heater, on a form to be furnished by the company. After inspection by the distribution department and approval by the water heating division, a voucher will be drawn in favor of the plumbing contractor for payment of the bonus.

BASIS OF PAYMENT

(6) It is understood that payment of commissions by the manufacturer, or bonuses by The Peoples Gas Light and Coke Company, are predicted on the assumption that the sale or rental has been made in good faith, and that the automatic water heating equipment will remain in service and continue to be used by the customer.

(7) The manufacturers co-operating with The Peoples Gas Light and Coke Company will furnish any plumbing contractor with a printed schedule of prices and terms relative to cash sales and rental purchase contracts.

(8) It is understood that the schedule of commissions and bonuses previously referred to under paragraphs 3 and 4, to be paid to the plumbing contractor, covers only automatic storage water heaters having an input rating of not more than 75,000 Btu per hour, and automatic instantaneous water heaters having an input rating of not more than 120,000 Btu per hour. In no event will rental purchase contracts for equipment of larger capacity be accepted by The Peoples Gas Light and Coke Company.

It is understood, however, that The Peoples Gas Light and Coke Company will pay a bonus for cash or deferred sales (not financed by the company) made by a plumbing contractor for automatic or instantaneous water heaters of larger capacity. However, in such cases the bonus to be paid to the contractor will be 10 per cent instead of 20 per cent.

(9) All sales of automatic water heaters made by The Peoples Gas Light and Coke Company will be installed by a licensed plumbing contractor and payment for this work will be made by the company on the usual

time and material basis. In no event, however, will any commission or bonus be paid to the plumbing contractor for sales or rental contracts made directly by the company.

Another tie-in between national and local campaigns is the effort of the Illinois water heater committee to set up working local agreements throughout the state. Here the state association has anticipated the national by going to those localities where there has been little cooperation, and by inducing the local association and the utility company to sit down together to talk things over. In this case, the members of the state committee have the successful experience of Chicago to fall back upon.

New Corporation—

(Continued from Page 60)

2. Reading of minutes. (a) Last regular meeting. (b) Last meeting of the board of directors. 3. Report of the board of directors. 4. Reports of standing committees. 5. Reports of special committees. 6. Communications and secretary-treasurer's reports. 7. Unfinished business. 8. New business (election of officers, etc.). 9. For the good of the corporation. 10. Adjournment.

Section 4. Voting Rights: Every active member in good standing shall be entitled to one vote. The method of voting shall be determined by the presiding officer at meetings, subject to the approval of the members present.

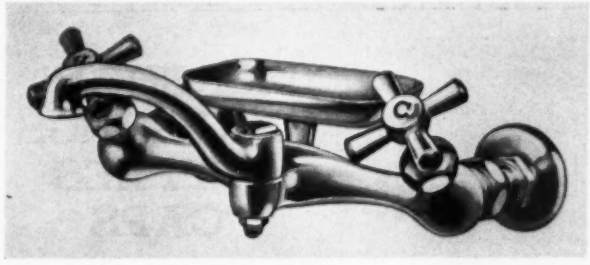
Section 5. Quorum: A quorum shall consist of four members in good standing, or, in the event membership should be reduced to less than five a majority of the remaining members.

Section 6. Rules of Order: The annual and regular meetings of this corporation shall be governed by the parliamentary law laid down in Robert's Manual, when not in conflict with the articles of incorporation or the by-laws of this corporation.

Article IX—Committees, Section 1: The board of directors may appoint such standing or special committees as it may deem necessary or advisable. Said committees shall serve at the pleasure of the board and shall have such powers and duties as the board may designate.

Article X—Fiscal Year, Section 1: The fiscal year of this corporation shall begin on the first day of July in each year and end on the thirtieth day of June in the following year.

Article XI—Surety Bonds and Audits, Section 1. Surety Bonds: The board of directors may require officers, employees, representatives and agents of the corporation to furnish the board of directors of this corporation with a surety bond in a surety company acceptable to the board, for the faithful discharge of his or



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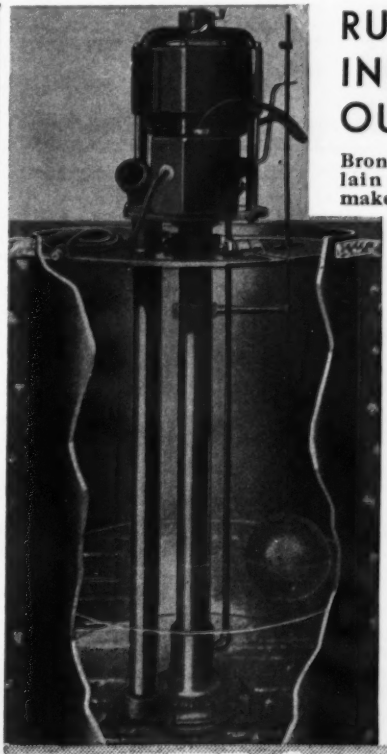

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Bronze—Everdur—Porcelain and galvanizing to make them 100% rust-proof inside and out. Husky special design motor to take capacity loads. A cellar drainer centrifugal pump design that produces greater lift for size of motor than other drainers anywhere near Uniflow's low prices.

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Above with 60 cycle single Phase Motor and discharge outlet pipe to top. Generous jobber and dealer discounts. Write for details on the complete Pump, Softener and Cellar Drainer line.

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UNIFLOW

SOME TERRITORIES OPEN FOR LIVE-WIRE MEN

her duties, the premium for which surety bond shall be paid out of the funds of this corporation.

Section 2. Audits: The board of directors may require an audit of the books of the corporation, of the secretary-treasurer, or any employee or agent at any time and under terms and conditions to be prescribed by said board.

Article XII—Voting, Section 1: In the deliberations and meetings of the members of the corporation and/or the board of directors of the corporation, no member or officer may vote by proxy and cumulative voting shall not be allowed.

Article XIII—The Council, Section 1: The board of directors shall have the authority to appoint a body to be known as "The Council" to serve without compensation, from the names of persons submitted by the National Assn. of Master Plumbers of the United States, Inc., the American Public Health Assn., the American Medical Assn., the American Water Works Assn., the New England Water Works Assn., and from such other organizations as may be invited by the board of directors to submit nominations, provided, however, that the board of directors shall designate the number of persons to serve as members of the council and the number of representatives to serve thereon from each of said associations or organizations. In the event of a member of the council failing to perform the functions of his office, the board of directors shall ask the association or organization of which said member of the council is a representative, for the nomination of a substitute.

Section 2: The council shall have the authority, subject to the approval of the board of directors, of developing the plans of procedure for the attainment of the objects and purposes of the corporation.

Section 3: The council shall have the authority to hire, in the name of the corporation, such assistants as may be necessary in the conduct of its work, subject to the approval of the board of directors.

Section 4: The council, subject to the approval of the board of directors, shall have the authority to designate the agency or agencies for the conduct of the work set forth in the objects and purposes of the corporation and to establish the amount and method of compensating such agency or agencies, issuance of certificates, accepting or investigating plumbing apparatus, appliances, materials, appurtenances and systems which may be submitted to the corporation by manufacturers or distributors thereof, or purchased in the open market.

POWERS OF BOARD

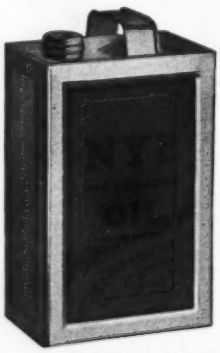
Section 5: The board of directors shall have the power to alter or amend any and all plans of procedure for the operation of the corporation as may be developed by the council.

Article XIV—Amendments, Section 1: These bylaws may be altered, amended, or repealed at any regular or special meeting of the members of this corporation or any special or regular meeting of the board of directors by a vote of not less than four members of the corporation or four members of the board of directors.

NYE TOOLS

"The Kind You Swear By and Never At"

Nye Pipe Threading Oil



To perfect your installation, threads must be sharp, clean and accurate. For this reason we recommend and guarantee our threading oil. It will add to the life of your dies.

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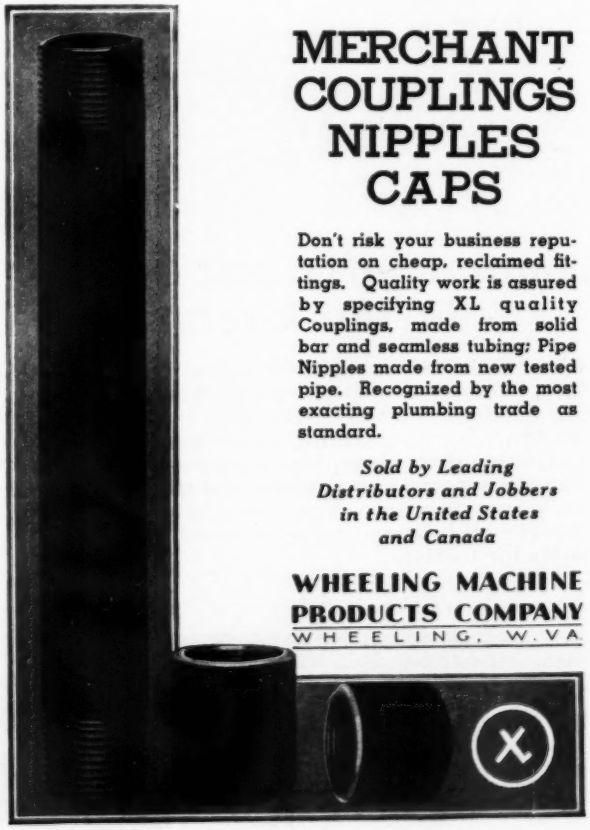

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Don't risk your business reputation on cheap, reclaimed fittings. Quality work is assured by specifying XL quality Couplings, made from solid bar and seamless tubing; Pipe Nipples made from new tested pipe. Recognized by the most exacting plumbing trade as standard.

Sold by Leading Distributors and Jobbers in the United States and Canada

WHEELING MACHINE PRODUCTS COMPANY
WHEELING, W.VA.

Water Systems—

(Continued from Page 61)

Thus when someone telephones for service, the Sanitary Plumbing Co. knows more than owners do about their pumps. Parts are carried on hand for most of the units found in the files or, in other cases, sources of supply for replacement parts are known in advance and parts can be obtained quickly. Possessed of its filed data, it is evident that this plumbing company can make repairs in a few hours at the longest and owners are not without the use of their electric pumps for long.

Fairfield County, Conn., is a fertile pump-selling field. Although some 70 per cent of the population of Norwalk are served by the city water system the remainder must depend on electric pumps or hand-operated wells. Leading prospects for new water systems are owners of surrounding estates, farms and homes, shops and other water users customarily served by individually-owned units. This results in generous user and prospect lists for this company.

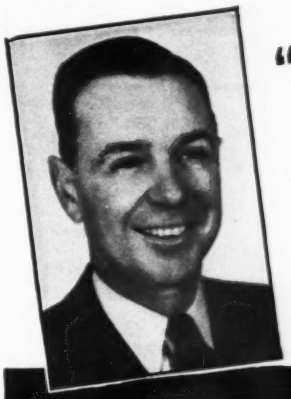
According to Manager Folger, 90 per cent of all service needs on electric water systems come as a result of improper installation. Craftsmen often make poor selections as to size, put pumps in too small or too large, leave off strainers and foot valves where they are needed and include them in places where they are useless. Further shortcomings are running long horizontal lines without compensating for loss of suction head, poor selection of storage tanks, improper sources of water supply, installing systems barely large enough for current needs and without regard for possible future water requirements.

By way of suggestions the Sanitary Plumbing Co. head listed several do's and don't's that might be used to avoid installation troubles. Here is the list of do's:

1. Place pumps as close to water supply as possible.
2. Be sure suction pipe joints are tight. If not, pumps suck air instead of water.
3. Use foot valves and strainers on end of suction pipes. They keep gravel, leaves, and the like out of the system.
4. In selecting pump sizes allow for expanded water usage. New bathrooms and vegetable gardens to come may overtax scant pump capacity.
5. Remember, a 50 gallon storage tank does not mean 50 gallons of water supply. The top one-third is air.
6. Vent cisterns and closed wells.
7. A larger than necessary pump is better than a larger than necessary tank. Large tanks tend to water staleness.
8. In soliciting pump orders call on the local country clubs. Fairway watering systems require about 16,000 ft. of pipe lines.
9. Call on private estates, parks and cemeteries for concealed irrigation. This type of installation is growing increasingly popular.

Here is the list of don't's:

1. Avoid water sources nearer than 300 ft. from privies and cesspools and under no circumstances have them nearer than 100 ft. Pollution travels easily via ground water.
2. It is advisable to graduate supply pipe lines. Unless this is done, water available at the end of the system may be disappointing due to frictional resistance within pipes.



"A BIG HELP in figuring close contracts"

says Jack Camp, Master Plumber, 1093 Natoma St., San Francisco, Cal.

"Never Split Toilet Seats are a big help in figuring on contracts when the competition is close. A toilet seat that won't come apart at the joints and won't peel or chip is a plus that helps to land the contract."

A *Small Sale* That Lands Big Contracts!

When you install a Never Split Toilet Seat, you are installing a permanent advertisement of the quality of your plumbing service, just as effectively as though you imprinted your name and address on it in letters a foot high. The Never Split patented steel screw construction assures a toilet seat that won't crack, chip or peel . . . won't split, warp or come apart at the joints. And that's a feature that reminds your customers to look you up when they want their money's worth in other supplies. Master Plumbers from coast to coast have found that a Never Split Seat is a door opener to big contracts. Your wholesaler can supply you.

EVERNU . . *Hard Rubber Seats!*

Not a single unfavorable criticism has ever been received about Evernu Hard Rubber Seats. No wonder it has been the seat specified by architects and contractors for hotels and office buildings from coast to coast! Your wholesaler can supply you.

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NEVER-SPLIT SEAT CO. Dept. C-11 Evansville, Ind.

SOLD ONLY BY MASTER PLUMBERS

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INSTALL SPRINKLING SYSTEMS

Use Our Free Plan Service

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THOMPSON PORTABLE SPRINKLERS

Attractive Rugged, Efficient

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THOMPSON Manufacturing Company

Thompson Sprinkling Systems

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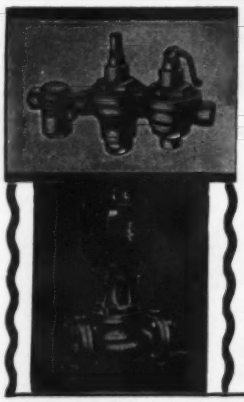


KAINER CIRCULATING • SYSTEMS • For HOT WATER HEATING

Above the well known Kainer Governor Model B-2, below the Kainer Circulator. These major units work coordinately and are fully described in special bulletin form. Have you your copy?

Write for Bulletin No. 66 Today!

KAINER & COMPANY

761 Mather St. Chicago

PAINE ANCHORS (LEAD EXPANSION)

Greatest simplicity and ease of use . . . greatest holding area . . . greatest strength . . . greatest anchorage in fragile materials or stone, concrete, marble, mosaic and similar material and greatest in economy . . . a really great expansion anchor.

Send for the new, profusely illustrated Paine Catalog. It tells all.

THE PAINE COMPANY

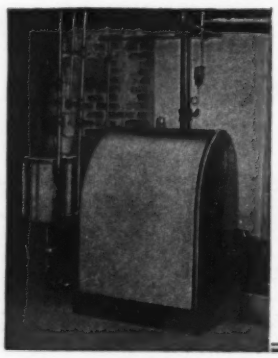
DEPT. 183, 2951 CARROLL AVE., CHICAGO

EASTERN OFFICE, 79 BARCLAY ST., NEW YORK

Fig. 900 Fig. 910

GERSTEIN & COOPER

Tankless Copper Water Heater



For Installation on any Automatically Fired System

Ruggedly Constructed. Highly Efficient—will deliver 360 gallons of hot water per hour. Will give years of service without maintenance. Domestic Water Shell is heavy gauge copper, electrically welded and thoroughly insulated with mineral wool. Copper tubing is silver-brazed to bronze headers with no threaded or ground joints to leak. Jacket is lead-coated steel, attractively finished in Duco.

Write today for complete details about Distributor franchise.

GERSTEIN & COOPER CO.

South Boston, Massachusetts

3. Don't expect a small pump unit designed for an average home also to irrigate an entire farm. It is better to have a separate pump for the house and garage and another for barns and irrigation.

4. Don't pass up as prospects, mercantile and industrial building owners simply because they have central station water. When these are in outlying sections, as they usually are, their pressure and supply from the mains may be insufficient and they need pumps as boosters.

5. Cement or other solid foundations are advised for storage tanks greater than 200 gallons capacity. Don't believe they can be set directly on earth and stay level forever; one end will sag.

6. When electric pumps are used as boosters, don't forget to by-pass them. Thus if anything should happen to the pump, customers will not be entirely without water.

7. Don't expect that water pressure at the end of pipe lines ordinarily will be the same as it is at the pump. Friction loss is heavy unless lines are properly sized. To discharge 9 gal. per min. through a ¾ in. line 100 ft. long requires 9.9 lb. pressure to overcome pipe friction.

8. While home owners still taking their water from a well by hand are Grade A prospects, don't fail to call on the local dairy, the florist, the club, the hotel, the factory. They buy many pumps also.

It is Mr. Folger's experience that many well drillers also handle pumps as a part of their regular business, but this by no means includes them all and many of the largest and best drillers turn all pump leads over to friendly plumbing contractors. It is suggested that if plumbing contractors keep in touch with the drillers, working on a reciprocal plan as to leads, both interests can be well served.

Some localities are known to possess abundant water supply near the surface; others require drilling and, of course, deep wells. On Long Island, for example, where soil is more or less sandy, one has to sink well points only 10 ft. or so to secure water. Hence, shallow-well pumps are in preponderance there. In Fairfield County, Connecticut, on the other hand, some sections are sandy while others are rocky. The latter type of soil usually requires deep wells.

The head of the Sanitary Plumbing Company reveals that its shallow well systems outnumber deep-well units. Both types of installation offer advantages. Not long ago Folger's men installed two deep-well pumps on a $400,000 private estate, each unit selling at $2,000. The amount of plumbing business that resulted in this instance was small because the pumps were to furnish water for watering lawns and like uses. On home units, by contrast, many owners think of their new pumps as the avenue to more plumbing.

The dominant purchasing motives, then, in connection with residence installations in Norwalk are, first, saving in labor, second, convenience and third, but by no means least important, ability to have new bathrooms, new kitchen sinks, running water for laundry tubs and garden watering, car washing and kindred uses. On this type of installation the door to profitable plumbing business thus is blasted wide open and the opportunity would not exist had the electric water system not first been installed. In the case of the Sanitary Plumbing Com-

pany, most of its plumbing business comes through the pump department.

Several important markets have been opened in and around Norwalk within the past few years. Some of these are private swimming pools, country mansions (to escape high city water bills), greenhouses (for the same reason), truck farms. Folger states that between 300 and 400 new private swimming pools have been installed in his county within the last four years and each has required electric pumps, piping and miscellaneous plumbing like shower baths, lavatories, toilets, water heaters, etc.

One large private estate had a monthly water bill, when using city water, of about $100.00. Through the installation of two electric pumps the owner was able to reduce the water cost materially. Times have been hard on commercial florists of late. Many have found it almost impossible to operate under high overhead costs which necessarily must include high water costs. Following the installation of an electric water system, these people are relieved of the dread of meter readers and have reduced their overhead costs on water to a considerable extent.

Reviving industry has contributed many sales. This applies to local hat and tire factories, dairies and laundries. The Sanitary company has had pump orders from all of the foregoing during the last year. It is expected that future expansion in this class of customers will increase pump requirements.

Blotters, folders, form letters and, occasionally, newspaper display space have been used effectively by this plumbing contractor in securing new leads. Constant calls on owners, taken from the file cards already mentioned, reveal further leads. One man devotes his entire time to calling on users. Journeymen are asked to file at the office any information gleaned in their regular work that might lead to pump sales. There has not been a shortage of good prospects at the Sanitary Company for many years. This contractor further encourages new leads by having on its display floor several electric units, chiefly of the shallow well type and it is found that pedestrians and visitors invariably pause to inspect the display.

Collection Letters—

(Continued from Page 63)

Courtesy is of course an essential. Don't pack too much dynamite into wordage. Even when you threaten to sue, do so in a courteous manner.

If the debtor can not pay immediately, try to get a definite understanding as to when he can pay, not an approximate date, but an exact tone. Research has shown that when a debtor is given an opportunity to set his own date, in 80 per cent of the cases he pays. When debtors make indefinite commitments they pay in less than 30 per cent of the cases.

It is a good idea for the contractor-dealer to try to learn the reason for non-payment. Next to collecting, the important thing is to know why you can't collect. This knowledge provides as basis for arrangements for eventual settlement.

Built-in
STURDINESS

Section of Elkay Sturdibilt Sink showing construction and re-inforcements.

All Stainless Steel Sinks may look alike, but—look under the surface—see the EXTRA thickness of metal —the EXTRA re-inforcements BUILT into

ELKAY *"Sturdibilt"*
STAINLESS STEEL
Kitchen Sinks and Tops

Only then can you appreciate the EXTRA VALUE you get in ELKAY equipment.

POINTS OF SUPERIORITY

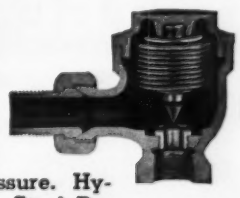
ELKAY "Sturdibilt" Sinks and Tops are built of 18 gauge (.050") Stainless Steel and backed with 14 gauge (.078") steel plates, making a total thickness of more than 1/8 inch. They are then re-inforced with longitudinal steel channel plates. Sink Bowls are welded integral to Drainboards. There are no joints or overlapping flanges. That's why ELKAY SINKS and TOPS give a lifetime of Service. They "stand up."

FREE KITCHEN PLANNING SERVICE

ELKAY Engineers render FREE Kitchen Planning Service to Architects, Contractors and Plumbers. Send us your specifications and we will submit plans and estimates without cost or obligation. Address Dept. DE3.

ELKAY MANUFACTURING CO.
4704 W. Arthington St., Chicago, Illinois

• Sterling
No. 7 TRAP



Functions with equal efficiency at 25" of vacuum or 25 lbs. pressure. Hydron Bellows, Stainless Steel Removable valve cone and Stainless Steel seat as standard equipment.

STERLING ENGINEERING CO.
3732 N. Holton Street, Milwaukee, Wis.

NEW G-A STACK SWITCH
... Offering New Utility
... New 2-Way Control

Precision built . . . more sensitive. For high-limit control on stoker, blower or damper motors. Or it may be wired for either rising or falling temperatures to regulate heating output. Adaptable to either high or low voltage control on any two or three wire circuit. You stock only ONE switch for BOTH uses. Assures complete owner satisfaction, a wider margin of profit for you. SEE your jobber or WRITE today for full details.

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DEPENDABILITY
At a Moderate Price

SHERMAN PRESSURE RELIEF VALVE

Here is a relief valve that establishes a new standard of value. It follows the spring type of design in order to provide the greatest simplicity with the fewest number of parts and the most positive dependable action. Being a safety device, it is not built to a price—but to a safety standard so that it will not fail in an emergency. Sold at the lowest price of any safety device offering the same measure of protection.

Sold Through Jobbers

Descriptive Circular with further details on request.

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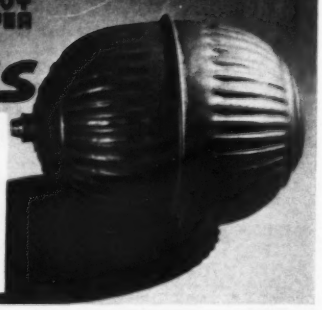
A New High Standard for Most Economical Type

Reichert
SOLDERLESS HEAVY GAUGE SHEET COPPER
Floats



Accent on Strength
Patented seam and spud construction.
Inspected, tested and guaranteed leak-proof.
Write for folders on the entire line of floats and rubber tank balls.
THE REICHERT FLOAT & MFG. CO.
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HOTEL LENOX

You'll enjoy your stay at the Lenox. Comfortable rooms, delicious food, excellent service, convenient location.

RATES

Single ..... $2.50 to $3.50
Double ..... $3.50 to $6.00
Family Suites $7.00 up
Special for 2 Rooms and Bath: 3 persons $6.00; 4 persons $7.00

Write for free AAA road map and booklet containing handy map of downtown Buffalo.

Clarence A. Miner, President
140 North St., near Delaware

★ BUFFALO, N.Y. ★

Collection letters should be personalized whenever possible. In most cases the contractor-dealer knows his customer well enough to write friendly letters to fit the customer's personality, rather than the stilted type of cold, formal collection letter. This suggests the advantage in using a conversational style and in giving the debtor the benefit of every doubt, thus creating no barrier.

Today the exact center of the known universe is "I". Therefore in writing collection letters this "I" must be translated into "You" as much as possible, so that the entire picture is built around the reader. The word "You" strengthens the appeal of a collection letter and is good salesmanship. The desirability of a good credit standing in the community, the injury to personal pride and business reputation through credit delinquency are two of the "You" appeals that speed payment. The reason form collection letters fail is because they can not be made to conform with the individual and the "You" appeal is lost.

Debtors care little for what the contractor-dealer thinks or believes. The debtor's own thoughts and convictions are paramount with him. Therefore collection arguments are of little avail unless they point toward a definite benefit for the debtor as well as the contractor-dealer.

Because farmers, merchants, laborers etc. are not aroused by the same appeal the approach must be in the language of the debtor himself whenever possible. If personal information about the debtor is not available a general collection letter must be substituted. Such a letter is reproduced on p. 63; it gives the debtor an opportunity to explain by a pencil check when and how he will pay. This at least offers the contractor-dealer an opportunity to plan his future collection attack on this debtor.

There are additional general rules that may be borne in mind when writing collection letters. First, it is best to make all statements positive and not negative. This suggests action. Also, present tense should generally be used instead of past tense. This helps give even an old bill a current surrounding and shows that the contractor-dealer intends to collect it. Finally, although suit may have to be resorted to in the end, it is generally best not to mention suit until such action is actually contemplated—then set a deadline when suit will really begin. Leave no doubt that the debtor has only ten days to pay up or face suit.

This final collection letter announcing the pending suit should be very brief. It merely states potent facts. The rest is left to the imagination and curiosity of the debtor.

It should not be forgotten that even the best collection letters can be ruined by wrong punctuation, poor spelling and unsightly appearance. Such errors and lack of proper margins take the punch out of good collection arguments and leave a poor, unbusinesslike impression. Antiquated words and phrases should also be avoided because they take up valuable space and say nothing. If there is ever any doubt as to the value of a collection letter the contractor-dealer can give it the final test by reading it aloud. In many cases this will reveal that the letter is either too strong or too weak, and a fresh start may then be made.

Modern Trucks—

(Continued from Page 65)

which Mr. Nord could scarcely have forseen. The very first time his up-to-the-minute fleet was turned loose on the streets of Corpus Christi, the office received more unsolicited phone calls for service than for weeks before! His snappy fleet proved to be the most effective and economical advertising medium he possessed, creating prestige and good will.

It was not long before Mr. Nord recognized other opportunities to achieve savings in connection with his commercial transportation. He installed a 550 gal. gasoline tank and modern pump adjacent to the shop, and effected a saving of four cents per gallon on eighteen cent gasoline, no small amount at the end of the month!

Chart Solutions—

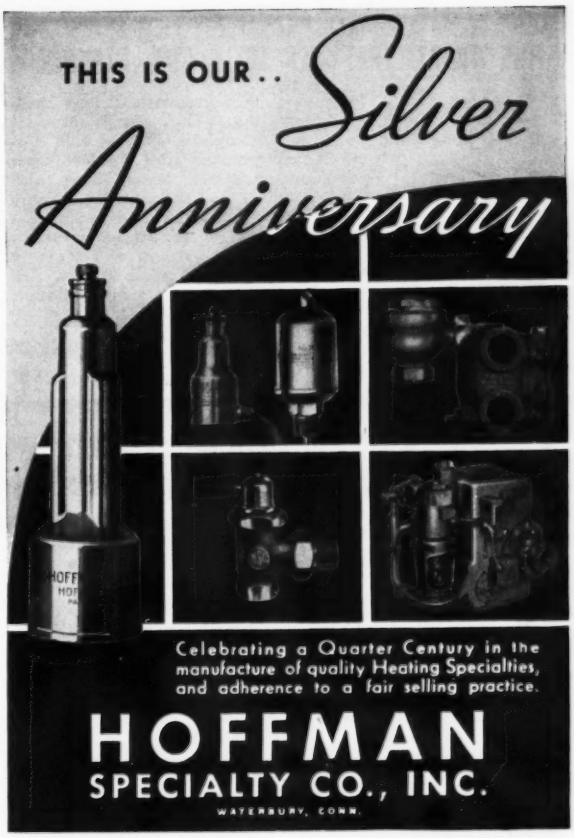
(Continued from Page 68)

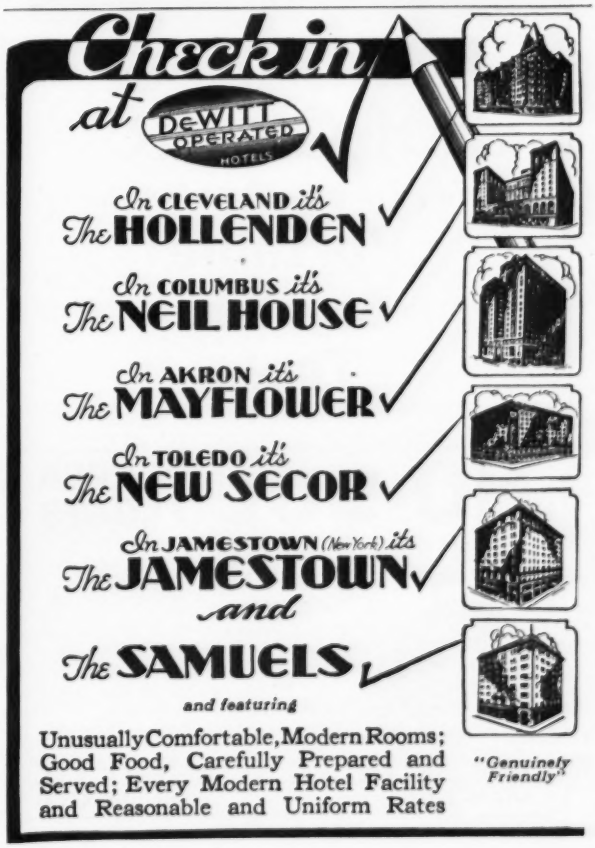
and after locating the area in question on this scale it is necessary to proceed vertically up from this point until the proper curve is intersected; a flat roof would use the curve marked "Flat Roof"; a south wall glass area would use the curve marked "Glass in South Side" and an east or west wall glass area would use the curve marked "Glass in East or West Side". Directly opposite the point of intersection with the correct curve on the scale at the left may be read the "Sun Effect in Btu. per Hour" for that area and this is the amount to be allowed and set up for this item in determining the amount of air and the refrigeration capacity necessary.

There are various helps in reducing sun effect which may be taken advantage of when they are present; if awnings are installed or are to be used, for instance, the sun effect on the glass is reduced to about ¼ of the effect without awnings and in using the factors which include an additional 6 sq. ft. of wall this reduction will be cut down to approximately ⅓ of the factor given. With buff window shades fully drawn down, the full sun

TABLE I

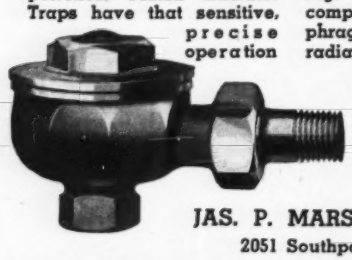
Electric Current	3,415 Btu. per kw. per hr.	
	2,546 Btu. per horsepower per hr.	
Natural Gas	1,000 Btu. per cu. ft. burned.	
Artificial Gas	550 Btu. per cu. ft. burned.	
Steam	1,000 Btu. per lb. condensed.	
Urns—10 gal. Coffee, Hw.	16,000 Btu. per hr.	
Electric Ranges	Small Burner	3,400 Btu. per hr.
	Medium Burner	4,100 Btu. per hr.
	Large	7,700 Btu. per hr.
	Warming Compartment	1,000 Btu. per hr.
	Oven	3,400 Btu. per hr.
Appliance Connection	2,250 Btu. per hr.	
Gas Ranges	Medium Burner	9,000 Btu. per hr.
	Giant Burner	12,000 Btu. per hr.
	Oven per cu. ft.	1,000 Btu. per hr.
	Pilot	250 Btu. per hr.
Restaurant Range	100,000 Btu. per hr.	


THIS IS OUR..
Silver
Anniversary
Celebrating a Quarter Century in the manufacture of quality Heating Specialties, and adherence to a fair selling practice.
HOFFMAN
SPECIALTY CO., INC.
WATERBURY, CONN.



THE TRAPS THAT SET THEIR OWN STANDARDS

• The product of long experience, Marsh Radiator Traps have that sensitive, precise operation that assures efficient heating. The Marsh line is complete. It includes diaphragm and bellows type radiator traps, float and thermostatic traps and inverted bucket traps for a wide range of services and pressures. Ask for latest bulletins.



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E-Z For Efficiency..Strength ..Durability..Economy

E-Z RADIATOR HANGER

Orders shipped on date of receipt regardless of quantities. Used by leading architects, contractors and U. S. Government. Quick, easy installation. Adjustable horizontally and vertically.

E-Z SEVEN-IN-ONE CONCRETE INSERTS

Only one size is needed for all size pipe hangers, whether using pipe or rod. Easily adjustable with play for expansion.

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HEALY-RUFF COMPANY, 770 Hampden Ave., St. Paul, Minn.
Also Manufacturers of E-Z Lavatory Hangers

BLACK & DECKER

World's Largest Manufacturer of

Portable Electric Tools

NO-SOL COPPER FLOATS

Quality Merchandise DOES MOST TO STIMULATE Consumer Confidence

5" Round Float

4"x5" Oval Float

Incorporated 1907

THE AYLING & REICHERT CO.
3047 N. ERIE ST. TOLEDO, OHIO

effect on the glass is reduced to about 70 per cent and with the factors including 6 sq. ft. of wall in addition to the glass the reduction will be cut down to about 75 per cent. Venetian blinds on the inside of the glass will reduce the full sun effect on the glass to about 60 per cent if the slats are turned at a 45 degree angle, while in glass factors including 6 sq. ft. of wall this reduction will be cut down to around 65 per cent of the factors given.

The allowances usually made for other sources of heat gain are shown in Table I and may serve as an indicator for use in the absence of more exact information.

New Code—

(Continued from Page 71)

The size of any stack, house drain and house sewer shall be at least that of the largest branch connected to it. Soil or waste stacks shall extend through the roof undiminished in size as established at the base, and shall also meet the requirements as to roof vent extensions and terminals. Soil and waste stacks shall be as direct as possible, and free from sharp angles and turns. The required size of a soil or waste stack shall be independently determined by the fixture units connected to the stack and the total length as in the table above.

When a stack 4 in. or more in diameter does not receive the discharge of any water closet, the diameter may be reduced one size without changing the loading or the developed length. The discharge of water closets into a stack less than 3 in. in diameter is forbidden. The discharge of more than one water closet into a 3 in. stack or branch is forbidden.

The horizontal run from the base of the soil or waste stack to the house drain shall be sized in accordance with the table for sanitary house drains.

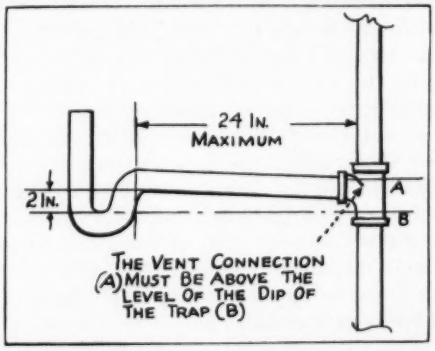

Fig. 7—This drawing shows the required specifications and connections for the fixture trap under the New York code

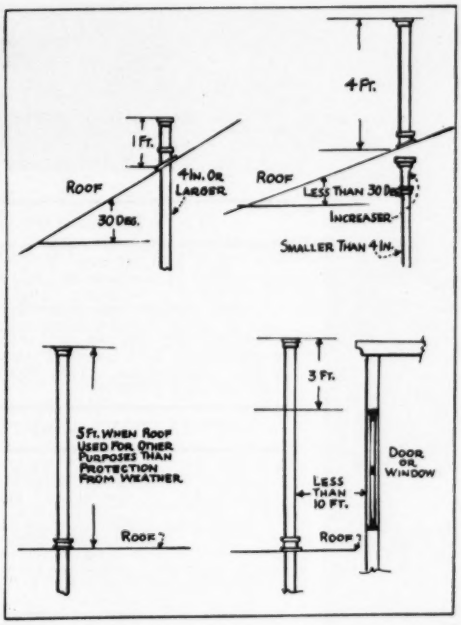

Fig. 8—Shows the various requirements for soil, waste and vent stacks passing through the roof

SIZE OF HOUSE DRAINS AND HOUSE SEWERS

The required size of sanitary house drains and sanitary house sewers shall be determined on the basis of the total number of fixture units drained by them in accordance with the following table:

(Sanitary system only)

Maximum Number of Fixture Units Permitted	Diameter of House Drain or House Sewer in in.
2	1½
9	2
25	2½
70	3
200	4
400	5
600	6
1500	8
2800	10
5000	12

The minimum size of a house drain receiving the discharge of a water closet shall be 4 inches in diameter, continued full size to all vertical stacks receiving the discharge of a water closet.

FREE TRIAL CAN

Thousands have found Sulflo superior to any cutting oils ever used before. We are so convinced that you too will find this true we offer a ½ pint can of Sulflo free. Give us your jobber's name when writing for your free can.

Cut Perfect Threads—Get Tighter Joints. Use Sulflo on your next threading job. Saves time and tools. Does a better job in half the time. Ask your jobber.

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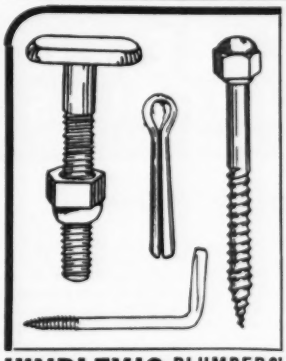
THE MODERN CUTTING OIL



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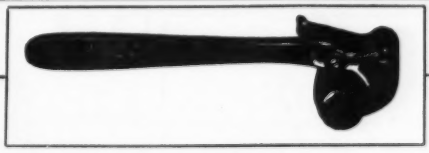
With a complete supply of HINDLEY'S Plumbers' Specialties on hand at all times, much valuable time can be saved . . . on the job and in the shop. The HINDLEY line comprises a COMPLETE, better quality assortment of plumbers' specialties that will prove an asset in any emergency. Don't be "caught short." order your supply today. HINDLEY MFG. CO., Valley Falls, R. I.

HINDLEY'S PLUMBERS' SPECIALTIES



•WARNOCK•

Triple Wear Wrenches

The Warnock wrench is easy to adjust. The strap is arranged in such a way that it can be drawn absolutely tight in *one* movement. Notice, too, that this strap is triple folded at the point of greatest strain.

For chroma, brass and nickel plated pipe

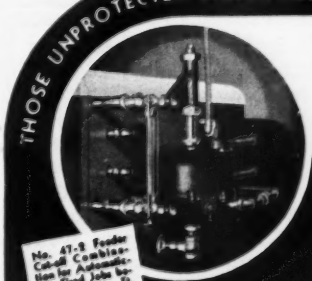
WARNOCK MFG. CO., Worcester, Mass.

IF IT'S FRESH . . . IT'S A DANDY

A tank ball that is as fresh when it is sold as the day it left the factory . . . that's the DANDY Tank Ball. Its attractive air-tight container guarantees its freshness . . . promotes quick turnover. The DANDY has a long established reputation with the trade for dependability. It is made of a tough black rubber compound that resists alkali and will not swell. Display this winner prominently in its attractive counter-carton . . . it will be a boon to your sales. Your wholesaler will supply you.

LAVELLE RUBBER CO.,
424 N. WOOD ST., CHICAGO, ILL.

THOSE UNPROTECTED STEAM JOBS ARE CALLING FOR



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Boiler Feeders and Low Water Cut-offs

• Ask for complete sales and installation data covering types and sizes for boilers of any make — any size — with any type of firing — any pressure up to 150 lbs.

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For Copper Tubing Work

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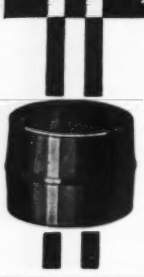
No. 99 PINT SIZE—For Close Quarters

CLAYTON & LAMBERT MFG. CO., DETROIT

PARMELEE *for* PUSH NIPPLES

modern and obsolete



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When you want replacement Push Nipples quickly—think of Parmelee. Orders shipped the day received. Complete stock. Push Nipples to fit any style, type or size of cast iron radiation ever made in this country. *Exact fit guaranteed.* Send sample or sketch giving accurate dimensions. Rust-resistant finish if desired. Also boiler nipples.

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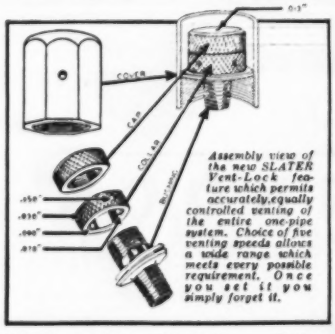

Assembly view of the new SLATER Vent-Lock feature which permits accurately, equally controlled venting of the entire one-pipe system. Choice of five venting speeds allows a wide range which meets every possible requirement. Once you set it you simply forget it.

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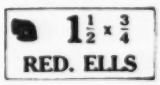

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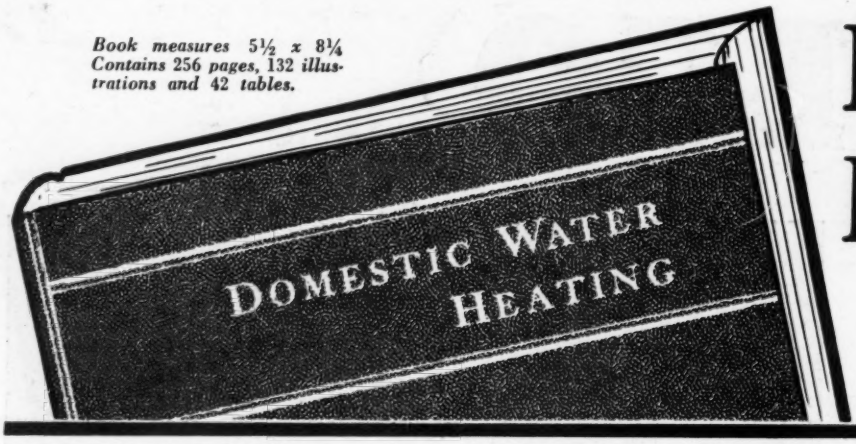

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